Maria Costanza Torri
Thora Martina Herrmann

Bridges Between Tradition and Innovation in Ethnomedicine

Fostering Local Development Through Community-Based Enterprises in India

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What an enormous magnifier is tradition! How a thing grows in the human memory and in the human imagination, when love, worship, and all that lies in the human heart, is there to encourage it. (Thomas Carlyle 1795–1881).

Change is one thing, progress is another. Change is scientific, progress is ethical. Change is indubitable, whereas progress is a matter of controversy. (Bertrand Russell 1872–1970).

Maria Costanza Torri is dedicating this book

To her family for their unconditioned love

To her friends whose presence makes her life so special

To Mimos

To the villagers of Karnataka and Tamil Nadu

Thora Martina Herrmann is dedicating this book

To her family for their always loving support

To all indigenous peoples over the world who struggle for their livelihoods, their culture and resources

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Chapter 1
Introduction

Abstract Although it is commonly acknowledged that enterprise development is a crucial element in the process of economic development, numerous projects aimed at promoting small business have not been successful. Recent research has focused greater attention on social networks and on the necessity to adapt the conventional concept of "entrepreneurship" to different cultural settings and the diversity of community needs. The purpose of this paper is to explore the conditions under which community-based enterprises could be an alternative model of entrepreneurial activity to enhance rural livelihoods and promote socio-economic development. The case study is of Gram Mooligai Limited (GMCL), a community-based enterprise in India active in the herbal sector that has been able to deliver interesting results in this respect. Findings from this case study emphasize the importance of seeing entrepreneurial activity in a much more holistic and complex light than conventionally understood.

Keywords Community-based enterprise • Ethnomedicine • India • Development • Empowerment

In an effort to alleviate poverty, international development agencies from industrial countries and multinational organizations have been heavily involved in interventions in the developing world over the last 50 years. Despite good intentions, the most widely adopted approaches have often been paternalistic, seeking, even if unintentionally, cultural assimilation, while ignoring the strength of local organizations (Cleaver 2001). Many poverty alleviation programs have degenerated into global "charity" rather than serving to build local and durable self-reliance (Gerin 2004). One common problem in development activities is that most projects are conceived and managed by the development agencies rather than by members of the community.

This has often led to a lack of any significant sense of ownership on the part of the target beneficiaries. Recognition of this problem has led a number of international development agencies in the last decade to design projects with a view to increasing the participation of local beneficiaries (World Bank 2007). However, it

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must be noted that externally induced development projects have often met with diverse challenges that have prevented target beneficiaries from effectively participating in aid programs. In many cases, the creation of local institutions by outside agencies has weakened or replaced local conventions. Frequently, local communities participate in the novel institutions only so long as there are tangible rewards, such as food aid, to be gained (Sachs 2008).

On the other hand, it is commonly acknowledged that enterprise development is a crucial element in the process of economic development (Tybout 2000). Private Sector Development (PSD) has become a central concern of most donors' development cooperation efforts during the last decade (Busenitz et al. 2000).

Particularly in the 1980s, when the multilaterals' development thinking moved away from the central role of the state, the private sector (and thus market forces and competition) increasingly became seen as more efficient, more productive and more conducive to economic dynamism. Privatization of state-owned enterprises, strengthening market forces, increasing competition and refocusing the role of the state became the catchwords.

Numerous projects have been executed among poor populations, aimed at promoting small business development as a means to improve their overall prosperity. It is, however, discouraging to observe the general lack of success in these programs (Dana 2002; Sachs 2008).

These failures suggest the difficulty to grasp the forms and fit of entrepreneurship in different cultural settings and in its holistic dimension (Anderson and Jack 2002). It is arguable that the values of the western world, particularly the United States, which emphasize individualism, continue to dominate the conventional view of what entrepreneurship is all about, and that efforts to encourage entrepreneurship in developing countries have been shaped by this outlook (Dana 2002). Indeed, societies differ substantially in the degree to which they incorporate elements of individualism (Anderson and Giberson 2004).

Until recently, little attention was given to "local innovation" and to management practices and institutions that local communities have developed themselves. This refers to the dynamics of indigenous knowledge – the knowledge that has developed over time within a social group incorporating both learning from the experience of earlier generations and knowledge that has been gained in the meantime from whatever source and has been fully internalised within local ways of thinking and doing. The ongoing emphasis on the commercial uses of medicinal plants and their related knowledge systems has contributed to an international interest in potential applications arising from indigenous peoples' knowledge in ethnomedicine (Kuipers 1997; Kala et al. 2004).

Even with the rise of new knowledge and techniques, such as genomics and combinatorial chemistry, traditional knowledge remains an important contribution to research and development in the agrochemical and pharmaceutical industry, where almost a quarter of sales are based on products with a natural origin (Timmermans 2003).

Bioprospecting, the exploration of biodiversity for commercially valuable genetic and biochemical resources, has been seen as a potentially powerful tool for

conservation (Reid et al. 1993). In addition, the ongoing emphasis on bioprospecting, which covers several areas including pharmaceutical, dietary supplements, cosmetics and other health care applications, has contributed to an international interest in potential applications arising from indigenous peoples' knowledge (King 1995). Despite the growing herbal sector, the indigenous communities, who are dependent on natural resources and who are the depositary of traditional knowledge, play a marginal role in the sector. The way traditional knowledge has been accessed for the production of new products deriving from biodiversity has often raised concerns and accusations of 'biopiracy,' a term used to describe bioprospecting activity without the consent of the communities concerned. The way Benefit-sharing (BS) agreements have been implemented in several countries are questionable, as they appear to be ineffective in promoting participation during the decision making processes and in delivering socio-economic benefits in the communities concerned (Dutfield 2000; Carlson 2001; Greene 2001).

One feature that sharpens the dilemma of access/use of biodiversity, in relation to the economic development of indigenous communities, is the widespread poverty of indigenous people, who 'are commonly among the poorest and most vulnerable segments of society' (World Bank 2001). Hence, an important economic opportunity for indigenous communities is lost at the very moment when renewed effort is needed to lift livelihoods among the rural poor.

The promotion of the private sector, in particular of small enterprises as an instrument to enhance local livelihoods, has been a main concern of the international community (World Bank 2007). However, in many developing countries, the preconditions for private sector development and the emergence of competitive markets that extend choice and opportunity to the poor are not yet in place. Indigenous communities are often deprived of the technical skills, financial resources and market information. The importance of partnerships in disseminating information about innovations, lowering transactions costs, and fostering collective action has been stressed in many developing countries (Hambly and Onweng 1996; Alam and Belt 2004).

India contains a great wealth of biological diversity in its forests, its wetlands and in its marine areas. Being 1 of 18 megadiverse countries, it is home to 7.6% of all mammalian, 12.6% of all avian, 6.2% of all reptilian, 4.4% of all amphibian, 11.7% of all fish, and 6.0% of all flowering plant species (Botanical Survey of India 1983). Many ecoregions exhibit extremely high rates of endemism; overall, 33% of Indian plant species are endemic. By conducting bioprospecting in biologically rich India, community-based enterprises may promote the identification, and conservation of biological diversity in accordance with Articles 7 and 8 of the CBD.

In this book, we combine the concerns described above with the analysis of indigenous entrepreneurship active in the herbal sector. Thus, the overall purpose of this monographic study is to interrogate on an new entrepreneurial approach which is alternative to the stream one and to analyze its possible contribution at the grassroots level in the herbal sector, a domain where local communities still play, to a large extent, a marginalised role. This innovative approach is represented by community-based enterprises (CBEs). Community-based enterprises are the result of a process

in which the community acts entrepreneurially, to create and operate a new enterprise embedded in its existing social structure and network.

We argue that community-based enterprise could represent a strategy for fostering sustainable local development, and is important for several reasons. First, traditional concepts of entrepreneurship and economic development do not appear to capture the essential features of investing in depressed areas, such as indigenous communities in developing countries. The mainstream entrepreneurship literature assumes the primacy of economic goals in new venture creation whereas in indigenous communities economic considerations may be secondary to other interests, such as cultural or environmental preservation. Similarly, there are differences in resources and infrastructure in developed and developing regions that may not be captured in existing models of entrepreneurship. If we are to study entrepreneurship in settings where prevailing assumptions do not apply, we must develop new theories, new models, and new frameworks.

A different approach to entrepreneurship, such as the community-based enterprise, could be significant for policy-makers and practitioners, given the growing interest in the bioprospecting arena, entrepreneurship and sustainability as tools for local development. This would be important because most efforts to assist in the improvement of developing regional economies have been unsuccessful, primarily because such efforts have either ignored local cultures and values or have been simply charitable programs that failed to address the root causes of poverty (Gui 2000). These new bioprospecting approaches, while complementing the current BS agreements, could allow the achievement of equity and the socio-economic development of indigenous communities more effectively. In addition, they could enhance participative processes of local communities within the bioprospecting process, which could be defined as "community bioprospecting."

In order to exemplify the concept of CBE, we will analyse the very first community-based enterprise active in the herbal sector in India, *Gram Mooligai Company Limited* (GMCL), which is based in Bangalore (Karnataka, India) and operates in rural areas in Karnataka and Tamilnadu. This is indeed currently the most innovative initiative that succeeded in developing a holistic approach, combining traditional knowledge, ecological conservation, and socioeconomic development through the active participation of local marginalised communities.

This community-based enterprise performs a dual activity:

- It supplies raw material to the pharmaceutical enterprises playing an intermediary role between these companies and the local farmers.
- It commercialises under its own brand name ayurvedic medicines, produced by local communities in Tamilnadu.

Specifically, this has three objectives. Firstly, it aims to identify how GMCL originated and the elements which characterize its structure and the functioning mechanisms of this organization. Secondly, it aims also to analyze the processes and the strategies by which it operates in the market. Thirdly, it aims to assess the socio-economic impact that this community-based enterprise has produced on the local communities.

This book in divided into seven chapters.

This chapter (Chap. 1) gives an introduction.

The *second* chapter explores the entrepreneurship and the role of local communities, by providing an overview on the evolution of the economic and entrepreneurial models. The notions of social capital and entrepreneurship are analysed in depth in this chapter. Finally, we shall discuss an alternative model: the community-based enterprise.

The *third* chapter looks at indigenous peoples, and the use and importance of traditional knowledge in ethnomedicine. We provide an overview on the issues of bioprospecting, its evolution and its dimension, and discuss the importance of traditional medicine and traditional knowledge for bioprospecting. We also analyse the impact of the current system of access to and use of biodiversity and traditional knowledge on the local communities. We then discuss the different approaches that currently exist in protection of traditional knowledge putting a special emphasis on benefit-sharing, and intellectual property rights (IPR) issues.

In the *fourth* chapter, we discuss the importance of entrepreneurship in the process of economic development, as a process involving not just as individuals, but also collectively as members of a community. We employ ideas and insights from anthropology to highlight cooperation as an engine of collective action, with community identified as a vital asset in an integrated approach to local development. We also employ social network theory and the concept of *embeddedness* to draw connections between entrepreneurial activities and the building and maintenance of communities.

The evolution of GMCL model, as well as its structure and functioning mechanisms, shall be explored in the *fifth* chapter. The role of the main players that comprise the GMCL structure, as well as the interaction between the different strata of the organization, will be examined. We shall also analyze whether the company's structure and its functioning mechanisms are instrumental in achieving its stated objectives.

Chapter *six* shall examine the economic framework and the main characteristics of the herbal market where GMCL operates. The marketing strategies followed by the company in both urban and rural market will also be analyzed. This part concludes with an assessment of the challenges that GMCL has to face as an enterprise operating in the herbal sector. The opportunities available for the future development of GMCL will also be explored in this chapter.

In the *seventh* chapter we shall examine the socio-economic impact of GMCL activity on the local communities in Tamilnadu and Karnataka. We shall put an special emphasis on its social outcomes, in terms of empowerment and capacity building of marginalized groups.

We conclude this book by proposing some implications for future practice, and discuss the potentials of the entrepreneurial approach presented and line out future perspectives for community-bioprospecting initiatives in the ethnomedicine domain.

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Chapter 2
Retracted Article: The Entrepreneurship and the Role of Indigenous Communities

Abstract Numerous projects have been implemented with the aim of promoting the development of local enterprises as a means to improve the conditions of rural communities. Their failure points to the difficulty of adapting the concept of "entrepreneurship" to different cultural settings and to the diversity of community needs. Whereas the community is typically treated in the literature as an exogenous part of the environment for entrepreneurship, an emerging point of view is to treat the entrepreneur and the enterprise as embedded in a network of relationships, usually local. The objective of this chapter is to ponder about the conditions which enable community entrepreneurial activities to alleviate poverty and promote local development. The chapter introduces the case study of Gram Mooligai Limited (GMCL), a community-based enterprise in India active in the herbal sector which delivered interesting results in this respect. This case study highlight the importance of seeing entrepreneurial activity and enterprise development programmes in a much more holist way that they are conventionally understood.

Keywords Community based enterprise • Development • Empowerment • Development models • Indigenous people

In the last two decades, the conflict between the modernisation and dependency perspectives led many to conclude that these two theories were incomplete, each describing a possible but not inevitable outcome of interaction between local regions, seeking what they regard as a better form of life, and the global economy. As will be detailed below, Corbridge (1989) states that there has been a powerful trend towards "theories of capitalist development which emphasise contingency…a new emphasis on human agency and the provisional and highly skilled task of reproducing social relations" (Corbridge 1989). This allows for the possibility of incorporating the experience of other peoples, other perspectives, and other cultures into the development discourse (Aldrich and Zimmer 1986). Recognising the increasing flexibility of modern economic systems, regulation theory analyses the

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global economy "in terms of a series of modes of development based on combination of the currently ascendant regime of accumulation and a variety of modes of social regulation" (Hirst and Zeitlin 1992).

We shall go one step further and combine this concern with the analysis of indigenous entrepreneurship in its broad dimension. In doing so, we shall take a close look at whether novel benefit-sharing arrangements give rise to new forms of bioprospecting, more participative at the grass root level, and more equitable in terms of sharing of the benefits issued by the access to traditional knowledge. Using this construct, we will develop a cultural understanding centred on traditional ecological knowledge (TEK) of an alternative entrepreneurial model to explain how culture influences indigenous entrepreneur values and practices toward the creation of new ventures and associated entrepreneurial behaviour. Although there are other possible variables that may influence entrepreneurial attitude and behaviour, we focus on the influence of culture on entrepreneurial attitude and behaviour.

Individual ethnicity affects attitude and behaviour, and culture reflects particular ethnic, social, economic, ecologic and political complexities in individuals and groups (Busenitz and Lau 1996). Thus, cultural environment can produce attitude differences, as well as entrepreneurial behaviour ad motivations differences (Apfell-Marglin and Marglin 1990).While definitions of 'indigenous' may vary from institution to institution, and from researcher to researcher, they generally contain three core elements which we employ for our operational definition of 'indigenous': (i) descent from populations inhabiting a region prior to other inhabitants; (ii) geographical, political, and/or economic domination by other inhabitants or Immigrants; (iii) maintenance of some distinctive social-cultural norms and institutions. In the definition of terms in this book, we employ the term of "indigenous entrepreneurship," instead of the one used by some researchers of 'ethnic entrepreneurship." This choice has been made taking into consideration essentially two elements. First, ethnic entrepreneurship mostly addresses the issues of immigrant populations and the situation of relatively newcomers to a particular region or nation (e.g. Flora 1998). In addition, ethnic entrepreneurship typically examines the economic interactions in a particular area of relatively new settlement, and the forces, such as social capital, that are brought into an area by the immigrants (e.g. Light 2004). In contrast, indigenous groups almost always involve individuals that have a close attachment to ancestral territories and the natural resources in them. Second, indigenous entrepreneurship is often connected with the notions of community-based economic development. In our analysis of indigenous entrepreneurship, we are considering the entrepreneurial activities of indigenous people in their indigenous setting. This applies to the GMCL, the indigenous entrepreneurship which lies at the heart of our book.

In the literature, the community is generally treated as an exogenous part of the environment for entrepreneurship (e.g. Borzaga and Defourny 2001). This mainstream entrepreneurship literature assumes the primacy of economic goals in the creation of new ventures (Dana 2002). It is also presumed that in indigenous communities, other considerations, such as cultural or environmental preservation, may be secondary to economic interests. Authors such as Anderson and Giberson (2004) and Dunning (2003) emphasize how there are differences in resources and

infrastructure in developing countries that are not captured in the mainstream model of entrepreneurship. Finally, the entrepreneurship theory generally assumes that ventures are created by an entrepreneur acting solely or as part of a small team of individuals (Anderson 2002; Hindle and Lansdowne 2005).

Despite good intensions, the approaches adopted by international development agencies and organizations to alleviate poverty have often been paternalistic. These development interventions have often tried to achieve, even if unintentionally, cultural assimilation, while ignoring the strength of local organizations (Rosser et al. 2000). Consequently, numerous poverty alleviation programs have not been able to build local and durable self-reliance but on the contrary, have degenerated into global "charity" (Fiet 2002). Indeed, it has been demonstrated that the real effect of many developmental activities has been to weaken community support systems, increasing the vulnerability and the dependency of local communities (Sachs 2008).

Externally induced development projects have often met with diverse challenges that have prevented target beneficiaries from effectively participating in aid programs. The presence of consolidated power structures, inappropriate legal frameworks, widespread prejudices, and deficient consultation processes have all too frequently defeated these attempts at genuine involvement (Frederick and Henry 2004).

On the other hand, it is commonly acknowledged that enterprise development is a crucial element in the process of economic development (Dunning 2003; Schumpeter, [1934] 1983). Numerous projects have been executed among poor populations aimed at promoting small business development as a means to enhance local livelihoods. However, the general lack of success in these programs is evident (Galbraith and DeNoble 2002).

These failures suggest that there are many gaps in the understanding of entrepreneurial activities in developing countries. These gaps point out the difficulty to grasp the forms and fit of entrepreneurship approaches in different cultural settings. Recent research and theory on transitional economies and immigrants, together with growing interest in micro-credits, has had the effect of focusing greater attention on social networks and community issues, as important elements in the understanding of entrepreneurial activity among disadvantaged peoples (Galbraith and Stiles 2003). Rural societies in developing countries are frequently characterized by hierarchical social systems based on ethnicity, gender, religion, economic and social status.

They are also characterized by limited or non-existent welfare systems and high rates of unemployment. These factors can stimulate the growth of entrepreneurship, though such entrepreneurs normally face high levels of uncertainty and risks due to political and economic instability and lack of access to capital markets (De Soto 2000). It may well be that there is not so much a shortage of entrepreneurial activity in these places, as a lack of the kind(s) of enterprise that provide more than subsistence for individual entrepreneurs and contribute to the prosperity of the society.

Conventional approaches to entrepreneurship in materially disadvantaged societies will produce minimal results since they are inconsistent with societal norms and ill-equipped to deal with the structural impediments to economic development. Still more, Minniti and Bygrave (1999: 43) argue that individuals' decisions to become entrepreneurs will be influenced by "three simultaneous elements: (1) the

subjective initial endowment, which is personal; (2) the institutional and economic circumstances of the economy, which are objective and community specific; and (3) the existing level of entrepreneurial activity in that community as perceived and evaluated by the individual."

The simultaneous nature of these determinants suggests that interventions that do not in some way address them all will not be very effective. Bygrave and Minniti (2000) imply that the third determinant explains why the rate of entrepreneurship may vary in regions with similar economic conditions. They see entrepreneurship as self-reinforcing and path dependent, and therefore, the history of a community will have a material impact on the entrepreneurial proclivities of its inhabitants. They conclude that there are threshold effects of entrepreneurship and that policy interventions that do not permanently raise the equilibrium level of entrepreneurship in a community will not be successful.

The enterprise development in materially poor countries and among poor populations has distinctive characteristics that help to explain its evolution and provide signals for how it can be made more abundant. One of the most important characteristics of enterprise development in these societies is the view that prevails in them of the nature of community. Every society combines, in its ethos, an implicit understanding of the way that the status and entitlements of its individual members should be understood in relation to the standing and legitimate requirements of the community itself (Kao et al. 2002). The more "community-oriented" a society is, the more its members experience their membership as resembling the life of parts of an organism, and the more they will feel their status and well-being is a function of the reciprocated contributions they make to their community (Light 2004).

Entrepreneurial accomplishment may not only be compatible with diverse social arrangements, but may benefit from the integration of specific cultural values and norms (Anderson 2002; Basu and Altinay 2002). The facts suggest the possibility that cultural identity may actually function as a tool for entrepreneurial activity. For example, ethnic ties among immigrants have been shown to promote cooperation and mutual support in entrepreneurial activities (Basu and Altinay 2002; McKay 2002)

2. Brief Evolution of the Economic and Entrepreneurial Models

Two conceptions of development namely modernisation, the traditional model of technology transfer associated with the political right, and dependency, the model associated with the political left were predominated since 1960s (Hobart 1993). Both conceptions have in common that less developed contexts would achieve the stage of more developed ones; thus developed societies stood as 'the model' to be followed. Development interventions were shaped accordingly. Many other scholars highlighted, development interventions in less developed countries are not just a matter of transferring information from more developed contexts. It is now widely recognised that this top-down approach to development has failed to

acknowledge local resources and the problems involved in the cultural, social and economic differences between distinct contexts (Apfell-Marglin and Marglin 1990).

Even though one cannot overlook the traditional north-south divide, globalisation has taken the problem of inequalities and development to a different level of complexity. The presence of poverty transcends the traditional boundary of Third World locations, which makes it crucial nowadays to recognise local contexts as one of the key tasks in development interventions (Atte 1992). Ignoring local realities and disregarding local systems of knowledge will lead to a failure of community development interventions. Longtime the belief dominated that development agents 'know best': agricultural extensionists, health promoters, technical experts and educators saw their knowledge as the 'best' and tended to overlook local knowledge and practices considered to be 'ignorance'. We agree when their argue that these hidden assumptions, commonly found in health promotion interventions, give ample support to Foucault's description of subjugated and dominant knowledges (Foucault 1980). They can also explain the mistrust and resistance with which local communities tend to receive outside workers.

Development initiatives which recognise, integrate and operationalise local perceptions, knowledge and practices are, then again, more likely to generate sustainable and successful interventions (Brokensha et al. 1980; Atte 1992). The experience of context, coping with crisis, and responding to changes and the way this experience produces knowledge and practices which emerge from, and at the same time respond to, the concrete conditions under which a society live have a lot of expertise and lessons learnt to offer. Community and development workers now recognise that local and indigenous communities have developed effective strategies of survival based on their cultural traditions and local and indigenous knowledge which offers means to respond to the urgent needs, and changes.

Looking specifically at economic development, the so called modernisation theory has dominated much of the economic development paradigms and practice since the 1950s (Ardichvili et al. 2003). A number of notions contribute to this theory. First, it sees development as passing through various stages. It implies that in order to progress and develop, traditional societies have to move toward modernity (Crewe and Harrison 1998). 'Modernisation' and 'development' came to be used as synonymous terms.

Secondly, monetary income, and therefore, economic growth, are regarded as key elements in measuring the quality of life. Thirdly, humans are or should be motivated by self-interest and rational economic behaviour (Burkey 1993; Crewe and Harrison 1998). From this point of view, the development of a country is measured in economic terms, with the expectation that 'underdeveloped' countries will over time assume the qualities of industrialised nations (Burkey 1993).

One of the underlying assumptions of modernisation is that traditional culture, social structures, and differing languages are barriers to progress, as the following quotation illustrates: "Pre-existing social relations… family, kinship and community, constitute obstacles to business enterprises and achievement… Successful capitalism involves some rupturing of existing social relations and possibly the

diminution of affective relations to leave more space to impersonal, calculating forms of social interaction believed to characterize the market economy" (Moore 1997, p. 289).

This general orientation has led to several neo-classical economic approaches to economic development, approaches that inevitably reside in some notion of assimilation. Modernisation or 'assimilation models' essentially argue that cultural divisions and differences ultimately interfere with efficient economic product and the differential advantages that individual nations might enjoy. Attempts to apply this framework for economic development, however, have not led across the board to the accelerating spirals of development, as it was hoped would result. The complexities of the poverty dynamic in different settings, and the need to respect local cultures and knowledge, increasingly created dissonance for modernisation scholars and practitioners.[1]

In a historical sense, dependency models of economic development emerged, not only as a critique of the failure of the modernisation agenda to deliver the anticipated development outcomes, but even more fundamentally to draw attention to what is seen by some as a new form of colonisation. In this analysis, the multinational corporation, the developed industrialised nation states and global institutions, such as the World Bank, the IMF, GATT, and later the WTO, are cast as the villains (Klitgaard 1990).

Rather than leading the 'underdeveloped' to a 'developed' state within the lens of dependency models, the actions of the developed world are seen as the basic (through conquest and colonialism) and continuing (through economic exploitation) cause of underdevelopment. According to the dependency critiques, participation by the underdeveloped in the global capitalist economy, as it is currently constructed, can only exacerbate their circumstances, not improve them (Brinkerhoff 1996).

The application of dependency models have led to programmes, such as import substitution, aimed at pursuing growth by developing internal resources without reliance on unbalanced trade with large and powerful outside nations. These programmes, however, have also proved largely unsuccessful. It has been argued that part of the problem with dependency-based models of economic development is that they are more oriented to a critique of modernisation than developing a theoretically sound approach to development of its own. Indeed, according to Hettne (1982), the development perspective arising from dependency theory appears to be little more than modernisation theory applied to the locus of a nation state.

In the closing three decades of the twentieth century, the conflict between the modernization and dependency perspectives led many to conclude that both theories are incomplete (as distinct from mistaken); each describe a possible but not inevitable outcome of interaction between local regions, seeking what they regard as a

[1] The 'green revolution' of the 1970s was a striking example of the way that growth could be produced while development lagged and poverty even increased. The negative growth and debt crises that ensued in some countries toward the end of the century called into question the simple implementation of modernisation programmes.

better form of life, and the global economy. As notes, this allows "for the possibility of incorporating the experience of other peoples, other perspectives and other cultures into the development discourse". Development need not be as defined by the 'developed world,' and the interaction between a particular people and the global economy need not be as envisaged by the modernisation or dependency perspectives; it can be something else entirely.

According to Hirst and Zeitlin (1992), 'regulation theory' executes, "a slalom between the orthodoxies of neo-classical equilibrium theory and classical Marxism to produce a rigorous but non-deterministic account of the phases of capitalist development that leaves considerable scope for historical variation and national diversity" (Hirst and Zeitlin 1992, p.84).

Expanding on this notion of variation and diversity, Elam (1994) says that on one hand, national and regional units are constantly in a state of flux, as they adjust to the influences of the global economy. All must accommodate themselves, at least to some extent, to its hegemony. At the same time, these broader global influences 'are seen as having essentially local origins' (Elam 1994, p.66). This translates into a counter-hegemonic potential in terms of the activities actually undertaken by people, as they negotiate their way locally through the global economy. It is not simply a case of conform or fail.

Recognising the increasing flexibility of modern economic systems, regulation theory analyses the global economy "in terms of a series of *modes of development* based on combination of the currently ascendant *regime of accumulation* and a variety of *modes of social regulation*" (Hirst and Zeitlin 1992, pp.84, 85). The regime of accumulation determines the general possibilities for the economy says it "can be rather simply defined as the historically specific production apparatus through which surplus is generated, appropriated, and redeployed". Importantly, with respect to geographic scale, the regime of accumulation is a "relationship between production and consumption defined at the level of the international economy as a whole" (Hirst and Zeitlin 1992, p.85); it is what most refer to as the 'global economy'.

As a result, regulation that stability in the global economic system is "dependent on the emergence of a further set of social relations that preserve it, for a time at least, from catastrophic internal collisions and breakdowns. These relations constitute a mode of social regulation. They are made up of a series of formal and informal structures of governance and stabilization ranging from the state through business and labor associations, to modes of socialization which create ingrained habits of behaviour". Hirst and Zeitlin (1992) agree, stating that a mode of social regulation (MSR), "is a complex of institutions and norms which secure, at least for a certain period, the adjustment of individual agents and social groups to the over arching principle of the accumulation regime" (p.85).

While regulation theory does not prescribe the exact nature of a particular mode of social regulation, it is generally agreed that a regime of accumulation does not create or require a particular mode of social regulation; "each regime, in short, may be regulated in a multiplicity of ways". Because modes of social regulation are based on such things as "habits and customs, social norms, enforceable laws and state

forms" (Peck and Tickell 1992, p.349) unique modes "can exist at virtually any territorial level – local, regional, national, global" (Storper and Walker 1989, p.215).

Another aspect of regulation theory – its historicity – adds further strength to the argument that modes of social regulation, and therefore modes of development differing considerably one from another, can and do emerge at every geographic scale (Corbridge 1989). Everywhere and at every geographic scale – community, subnational region, national, supranational regions and globally – indigenous or not, people are struggling to develop modes of social regulation that will allow them to interact with this new flexible regime of accumulation. Within this framework, both the nature of flexible regimes of accumulation and overlapping models of social regulation are emerging (Gnyawali and Fogel 1994).

This leads us to a discussion of the modes of social regulation emerging in response to the demands of the flexible regime of accumulation. In response to the change in the regime of accumulation, the nature of the regulation is changing. Several authors have noted a shift in the locus of regulation from the nation state in two directions – to the supra-national and the local. Dicken (1992, p.307), for example, emphasises that successful participation in the global economic system "is created and sustained through a highly localized process" and that "economic structures, values, cultures, institutions and histories contribute profoundly to that success."

Under regulation theory, the firm appears to open up a number of opportunities for community enterprises and entrepreneurial efforts. This is due both to the changing regimes of accumulation arising from the increasing flexibility and decentralisation in both production and consumption activities, as well as the changing models of social regulation, as hierarchical models of the firm evolve into alliance and relational based organisations.

Community economic development models (CEDM), an effectively 'bottom up' approach to development policy, have become one key issue in development policy since 1990s (Savoie 2000). According to Savoie (2000: 17 ff.), this is due to a variety of reasons, such as the failure of top-down approaches, the negative impact on regional economies of the neoliberal policy environment of the 1980s, the "plenty of work but only a few jobs" realization at the regional level that generated the "end of certainty" scenarios for policy design, and the prevailing view that only the private sector can produce job growth (not governments have had little success) (Savoie 2000: 17 ff.). However, as Savoie succinctly observes, it is politically naive to suggest that government will not intervene to promote economic development at the regional level (2000, p. 20). One way is through the support and advocacy of CEDMs. This raises the issue of institutional design for CEDMs.

Pierce and Roseland (2000) defined a CEDM as: "a process by which communities initiate and generate their own solutions to their common economic problems, building long-term community capacity and fostering the integration of economic, social and environmental objectives" (Pierce and Roseland 2000: 9). Yet, as Savoie points out, community economic development means different things to different people. For example, it can refer to institutional building at the community level. This is one focus of this book with a special emphasis on women's capacity.

A CEDM can also describe or prescribe economic development in a specific geographical area. In our book, we will analyse a case study from India. It can further refer to a bottom-up rather than a top-down method of development. It can also indicate the development of a community business (2000, p. 13), such as is being highlighted in this book through the case study of GMCL, a community enterprise formed by different groups/associations of farmers active in the herbal sector. CEDM approaches are noted for their predominance in rural areas, where problems of economies of scale and critical mass exist (especially in urban centres, where job growth is attached to the service sector).

In analysing two different community economic development models from Canada and Australia, McCall (2003) states that in order to be successful, a CEDM must focus its action on needs, potentials, and opportunities, a process which takes time, patience, and resources. Therefore, when establishing a CEDM, long-term commitment at all levels needs to be made. McCall, moreover, emphasizes that, "because the goal of CEDM is 'endogenous development' that will allow communities to become development makers rather than development takers, such success will require comparative advantage fostered and supported by entrepreneurs, administrative capacity and strong political advocacy within and outside the community" (McCall 2003: 107). Similarly, Savoie (2000), based on his Canadian case study, recommends that the "onus for economic development should be placed squarely on the shoulders of community leaders and local entrepreneurs."

In Europe, links the growth of community-based economic development initiatives to the "apparent inability of central government policies to cope with the scale and pace of localized decline," and shows, taking as example a UK study of Merseyside, that such initiatives have encouraged "the development of community businesses", which can act as a catalyst for the development of mainstream business activity in the long term.

Examining 12 case studies of community and local economic development models in Latin America (Argentina, Chile, Colombia, Mexico, Peru), Helmsing (2001) shows new trends in the practice of local economic development, and proposes an emerging third generation 'new institutionalism,' where the position and positioning of local economies in large (national) and international economic contexts become central. He underlines that vertical forms of collaboration are as useful and important as horizontal cooperation, as they both function to complement one another. Through forming consortia with higher levels of government and/or more specialized national agencies, local community authorities may have access to specific expertise, training, resources, and services that otherwise may be out of their reach. This leads to enhanced capacity which in turn can increase the effectiveness of the promotion of decent work. In addition, as we will show later on in this book by examining the GMCL community enterprise experiences, networking with national agencies that are the intermediary bodies between municipal authorities and the global economy can enrich the local governments' understanding of their ties to the international economy and thus be better prepared to respond to changes that happen at the international sphere (see also Helmsing 2001:10).

Helmsing (2003) shows that in Africa, an essential and distinguishing feature of local economic development and survival is the role played by community economic development. This is also echoed by other scholars (cf. Rogerson 2003; Hill et al. 2007). Examining several Africa-specific experiences, Helmsing (2003) and Dewees et al. (2003) describe the principal characteristics of CEDMs and local economic development as being its multi-sectoral and multi-level nature, where various sectors of the economy can mobilize strategic stakeholders and resources to enhance local systems for economic development, in a constantly changing economy, which often culminates in new forms of local economic governance. However, while the goals of CEDM strategies across international experience may share certain similarities, the capacity to develop successful local economic development initiatives varies widely, depending on the diversity of resources and the level of economic development. Similarly, as shown by Rogerson (2006), the range of local economic development initiatives can have a different focus, regarding the application of pro-growth or market-led approaches on the one hand and pro-poor or market-critical variants on the other.

Binns and Nel (1999) argue that local economic development in the South is often a survivalist strategy, concerned with self-reliance and the use of indigenous knowledge by community groups, and that "in poorer countries [it] takes on a more basic form, due to limited resources, technology and external support" (Binns and Nel 1999: 390). Similarly, Helmsing (2003) argues that community economic development is a crucial dimension of local economic development in the South, due to the limited role of the state in agriculture, the shift in policy towards decentralization of certain functions, increasing rural population densities, poverty, insecurity, and the effective absence of services, which all increase pressure on communities to respond to development needs and challenges in a collective or individual manner. As the GMCL case discussed in this book will show, in a poor country, where environmental degradation and limitations on the capacity of the state to intervene are a reality, communities have to seek for locally appropriate development options which are cost effective and which can provide food security, health promotion, and products that can be sold to provide some income.

2.2 Social Capital and Entrepreneurship

Recently, there has been a shifting vision of the entrepreneur and the enterprise, seen as embedded in a network of relationships, especially at the local level (Johannisson et al 2002).

There has also been a surge of interest in the notion of social capital in relation to the economic activity, in large part due to the interest generated by the work of Putnam (1993). Indeed, scholars have begun to highlight the importance of recognizing entrepreneurship as building on a collective process of innovation (Grootaert and Van Bastelaer 2002; Bowles and Gintins 2002). Collective learning and social solidarity can, for instance, explain the growth and resilience of Silicon Valley

(Swedberg 1997) and the emergence of business districts in Europe (Johnson 2000). According to Putnam, social capital refers to features of social organization, such as trust, norms, and networks, that can improve the efficiency of society by facilitating coordinated actions.

Granovetter proposes that economic action is always embedded in "concrete, ongoing systems of social relations" (Granovetter 1985). The concept of embeddedness has be applied to, and has expanded the scope of, approaches often noted for limited economistic assumptions, such as the study of inter-firm or industry networks. However, it is also evident that organizations are embedded in other concrete structures of social relations, of which the local community is possibly the most significant.

Embeddedness itself is a concept that is related to the notion of the "gift economy." Initially, largely associated with archaic societies (Mauss, [1925] 2002), the gift economy has also come to be considered an essential characteristic of modern societies (Klamer 2003). The emergent feature of a gift economy is the existence of transfers of goods or services on a regular basis from one member of a community to another, or among communities, without any explicit agreement of compensation. The central element of "gift economy" is that this practice is embedded in a set of social arrangements and shared understandings that give it significance.

The relevance of the gift economy, as a concept for understanding entrepreneurship and economic development, has been emphasized by authors such as Taylor (1999). Drawing on anthropological research, Granovetter (1985) used the insights contained in the concept of the gift economy to develop what he defined as "the new economic sociology." Granovetter introduced the concept of embeddedness to point out the importance of personal relationships and networks of relationships in standard market economic systems. In this way, this author challenged the view that with the process of modernization, "economic transaction [is] defined no longer by the social and kinship obligation but by individual gains."

Within these networks, people and communities are able to build strong relationships, which over time allow trust, cooperation, and a sense of collective action to develop among members of a network. Concrete personal relationships and networks of these relationships are thus crucial components in the functioning of an economic system (Johannisson et al. 2002; Westlund and Bolton 2003).

Bourdieu (1997) recognizes that certain features of social organization, such as trust, norms, and networks can improve the efficiency of society by facilitating coordinated actions. 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 cooperatively; and broad agreement on social norms (Onyx and Bullen 2000).

Social capital is not tangible in the way that products and services normally are, but it facilitates the productive activity by providing access to other resources, such as knowledge and capital (Anderson and Jack 2002; Coleman 1988). Coleman (1988) underlines the difference between social capital and private resources further

when he argues that most social capital can be viewed from a public-good aspect, i.e., that it forms "an attribute of the social structure in which a person is embedded" and that "social capital is not the private property of any of the persons who benefit from it" (1990, p. 315). Like Bourdieu, he regards social capital as a network attribute.

Social capital is seen as a necessary ingredient for economic development, and it is viewed as something that generates *positive externalities* (Onyx and Bullen 2000).

A social network perspective, an outlook from which opportunities are continually re-identified and re-organized, can contribute to the recognition of social factors that invite new business creation (Fine 2001; Greve and Salaff 2001). However, certain authors in business economics are increasingly discussing aspects of these issues in terms of "corporate entrepreneurship" (Dasgupta 2000; Claesen et al. 2000) and "entrepreneurship as a collective phenomenon" (Johannisson et al. 2002).

Worldwide, policy makers are using the language of local capacity building as a strategy to help impoverished communities to become self-reliant. Furthermore, reports of community development initiatives among poor communities suggest that the employment of social capital within communities can be a key strategy in fostering sustainable development (Lyons 2002; World Bank 2007). Research on ethnic groups indicates that in some communities personal networks provide a major resource for starting a venture. Studies in China and among immigrants have shown that in adverse situations people depend especially on co-operative relations (Bruton et al. 2000).

In the constitution of an enterprise the presence of networks provides a social resource (Thomas and Mueller 2000) and increases the self-confidence and the motivation of the entrepreneur (Hunt and Levi 2003). One way of looking at networks is to see them as a continuing source of what may be called "creative bridging activity" (Thomas and Mueller 2000), which brings innovation through the creation of new products, new methods of production, discovery of new markets, or ways of organizing (Schumpeter, [1934] 1983). Access to a social network is not enough to guarantee the creation of social capital, and there are circumstances where an absence of social ties may actually be an advantage (Hoang and Antoncic 2003). But the role of networks and the opportunities they create is hard to overestimate.

The impact of social networks has been critical to the development of local community business capacity in many small towns (Hayton et al. 2002; Lyons 2002) because of the way that social networks can facilitate the processes of learning and innovation. In turn, the interaction between the individual and the organization has allowed the development of a common identity and creative processes to respond to the challenges and pressures of economic globalization (Dunn and Holtz-Eakin 2000; George and Zahra 2002).

Research and theory in entrepreneurship has drawn attention to the way in which those individuals with extended social networks are advantaged in the quest for entrepreneurial success (Anderson 2000; Johannisson et al. 2002). What needs further consideration, however, is the extent to which communities themselves, as collective units, may function as entrepreneurs and enterprises, and may benefit in those functions from the social capital at their disposal.

Research studies have sought to make links between empowerment at the individual, community, and organisational levels (Israel et al 1994). It has been argued, however, that in practice, research examining the impact of interventions and policies aimed at promoting empowerment has often tended to focus on outcomes at the individual, psychological, behavioural levels, with inadequate attention to community-based processes and community-level outcomes (Hickey and Mohan 2004).

As an antidote to such criticisms, there has been an upsurge of work describing those features of community that serve as preconditions for successful community empowerment. Phenomena such as 'sense of community' (McMillan and Chavis 1986), 'community competence' (Eng and Parker 1994), and/or 'collective efficacy' (Sampson et al 1997) have each been cited as features of community most likely to enhance the development of their members.

The concept of 'community capacity' has also generated much interest. In their definition of community capacity for successful entrepreneurial promotion, Goodman (1998) emphasises the importance of leadership, citizen participation, skills, resources, social and inter-organisational networks, sense of community, understanding of community history, community power, community values, and critical refection.

Despite the excellent quality of many such studies of community level determinants of health, there is a lack of conceptual coherence when one attempts to pull together these findings, and the cumulative impact they might otherwise have had, is severely diluted. We argue that one reason for this fragmentation lies in the theoretical paucity of this area of interest. Researchers cover a variety of descriptions of surface level aspects of community, but much scope remains for the development of theoretical frameworks seeking to explain the underlying social psychological mechanisms, whereby community empowerment impacts entrepreneurship.

Recently, much attention has been given to the possibility that the concept of 'social capital' might provide an integrative framework for conceptualising those features of community most likely to enable and support entrepreneurship enhancing behaviours. Putnam (1993) defines social capital as the community cohesion resulting from four features of community: (i) the existence of a dense range of local community organisations and networks, (ii) high levels of civic engagement or participation in these community networks, (iii) a strong and positive local identity and sense of solidarity and equality with other community members, and (iv) generalised norms of trust and reciprocal help and support between community members, whether or not they are personally known to one another. It has been argued that people are more likely to be healthy in communities characterised by high levels of social capital (Gillies 1998).

Along these lines, it has been noted that an important determinant of the success of participatory enterprises' promotional interventions is the extent to which they mobilise or create social capital (Kreuter 1997). Social capital is considered to be important for enterprises promotion for two reasons. Firstly, communities that are rich in social capital are said to provide a supportive context within which people can collectively re-negotiate social identities in ways that promote the increased likelihood of entrepreneurial enhancing behaviours.

This emphasis on social identity is important, given that entrepreneurial enhancing behaviours are determined more by collectively shaped social identities than by individual rational choice, as assumed in traditional information-based community education. Secondly, residents of communities with high levels of social capital are most likely to have high levels of perceived control over their everyday lives. This is important for development, given that people who feel in control of their lives in general are more likely to take control of their own development patterns, through entrepreneurial enhancing behaviours (Campbell et al. 1999).

These points resonate with insights from the work on empowerment and are also directly linked to the concept of conscientisation. The notion of social capital has taken strong hold in the discourse of leading international development agencies, and the task of building or enhancing local social capital is increasingly regarded as a key dimension of a wide range of entrepreneurial promoting development initiatives in disadvantaged settings. However, much work remains to be done if social capital is to be a useful conceptual tool for the design and evaluation of enterprises promotional programmes aiming to reduce social inequalities.

In particular, the concept has been criticised for its failure to engage with the way in which various forms of social exclusion undermine stocks of social capital in marginalised communities. While Putnam's conceptualisation of social capital is the one most frequently cited in development promotion circles, critical social scientists have expressed concern that a focus on community level determinants of entrepreneurship could serve to displace attention from the well established links between health/poverty and marginalization (Muntaner and Lynch 1999). Such critics argue that Bourdieu's (1997) concept of social capital might be a more appropriate starting point for understanding health inequalities, with its emphasis on the role played by different forms of capital in the reproduction of unequal power relations (Baum 1999).

The concept of social capital has generated a great deal of controversy and criticism, with much of this discussion posed as a polarised argument about the possible relative benefits of community-level, or social capital and macro social (e.g. racism, poverty) explanations of development.

The, for example, poverty is clearly a primary cause of social inequalities, and the economic regeneration of deprived communities is essential for reducing such inequalities. However, if one of the effects of poverty is to undermine development-enhancing community networks and relationships, *economic regeneration* must be accompanied by *social regeneration.*

In the same vein, Labonte (1999) expresses concern that concepts such as social capital and participation are dangerously ambiguous. On the one hand, they serve as potential tools for critical social theorists, who argue that it is only through grassroots participation in strong community-based organisations that socially excluded people will gain the power to lobby governments to recognise and meet their needs. On the other hand, such concepts have the potential to be 'hijacked' by neoliberal, free market theorists, who argue that grassroots organisations and networks have the power to take over many functions (e.g. welfare previously assigned to governments). Such arguments can serve as justifications for cuts in welfare spending in

more affluent countries of the north, and reduced development aid to poorer countries in the south. Labonte's arguments highlight the vital importance that critical social scientists locate conceptualisations of social capital, participation, and community development against the backdrop of wider conceptualisations of power.

While agreeing with the concerns expressed above, it is our view that the concept of social capital could result in a useful framework for conceptualising community level influences on health. It needs further development along two dimensions, however. Firstly, there is a need to theorise the larger power mechanisms that shape and constrain the potential influence of social capital on collective entrepreneurship. Secondly, there is a need to explicate the social psychological mechanisms whereby social capital, and the community participation it entails, impact development.

2.3 An Alternative Model: Community-Based Enterprise

The traditional perspectives of entrepreneurship research either explore the traits and characteristics of the entrepreneur, or what the entrepreneur does (Anderson and Giberson 2004). These two themes reveal an underlying assumption that entrepreneurship exists at the level of the individual as opposed to a group phenomenon. An alternative approach, however, recognises that entrepreneurial activity can occur at group level, and that, in some cases, it may be more appropriate to encourage entrepreneurial activity in groups of individuals. Entrepreneurship by groups of individuals may take the form of entrepreneurial venture teams or intrapreneurial teams. According to Davidsson and Honig (2003), growth-oriented new firms are often built around a founding team in which the members of the team identify the initial venture and develop a strategy to exploit it. Also, within the context of organisations, groups of individuals may be allocated to an "entrepreneurial team" to promote intrapreneurship among employees (Bertrand et al. 2000). Teams in these examples refer to groups of individuals in the context of an organisation, not in the community, which is the focus of this monographic study.

It is perhaps intuitively appealing to think of entrepreneurship as associated with the pursuit of economic wealth. However, such a perception ignores the potential social benefits generated for others that entrepreneurship can produce. Solow (2000) states that entrepreneurs are strongly associated with the creation of economic wealth, both for themselves and for society, thus emphasising the contribution of entrepreneurship to the broader economy.

In discussing community entrepreneurship, there is an initial need to define exactly what the term means. Following Schumpeter (1934), Begley and Tan (2001) define entrepreneurship as the un-programmed, innovative re-combination of pre-existing elements of activity. The traditional perspective of business formation has been based on the initiative of one or two entrepreneurs (Krishna 2000); however, this definition emphasizes that entrepreneurship is a process, as distinct from the entrepreneur as a person. In defining entrepreneurship as a process, the term is not necessarily limited to individual behaviour and could therefore be applied to a

group. Secondly, a community is defined as "a small basic administrative or statistical area, preferably as homogenous as possible" (Borzaga and Defourny 2001).

Here we use the term "community" to refer to an aggregation of people that is not just defined by the sharing of goals or the productive activities of the enterprise, but rather by shared geographical location generally accompanied by collective culture and/or ethnicity, and potentially by other shared relational characteristics (Maldifassi 2001). The community may be delineated by political boundaries (e.g. it may also be a village or a municipality), but it need not be. Homogeneity of interests in a community implies commonality, and in this light, it may be useful to consider that "community is a sense of spirit and cannot be defined by geography, environment or activity" (Mort et al. 2003).

In reality, the spirit of commonality of interests may itself transcend geographical boundaries, so that in practice, it is the communities themselves that are able to identify themselves via a shared interest. The idea that members act "together," "corporately," or "collaboratively" should be understood flexibly. Some members may be more active than others, but most or all will have some role in developing and implementing the entrepreneurial initiative.

Most, if not all, members will participate in some relatively direct way in monitoring and directing the enterprise's activities. Some will, in addition, be active, ongoing participants in the productive tasks of the enterprise. But virtually all will be committed to a common undertaking, though they are first of all defined as a community by something other than that shared commitment. Incorporating these comments, community entrepreneurship in this monographic study refers to the innovative re-combination of pre-existing elements of activity by inhabitants with shared interests living in a small basic administrative or statistical area. Community entrepreneurship attempts to use the process of entrepreneurship as a force for economic development by exploiting the resources and assets of the community. According to the definition of the social capital is*"the willingness of individuals within a given organisation to contribute unselfishly, loyally and non-opportunistically to the attainment of joint objectives."* A critical resource for CBE is the social capital that exists in a community (Minniti and Bygrave 1999).

We believe CBE represents a promising strategy for fostering sustainable local development.

This conceptual innovation is, in our vision, important for several reasons:

First, traditional concepts of entrepreneurship and economic development do not appear to capture the essential features of venturing in depressed areas, such as indigenous communities in developing countries. For example, the mainstream entrepreneurship literature assumes the primacy of economic goals in new venture creation (e.g. Gartner 1985), whereas in indigenous communities economic considerations may be secondary to other interests, such as cultural or environmental preservation. Similarly, there are differences in resources and infrastructure in developed and developing regions that may not be captured in existing models of entrepreneurship. If we are to study entrepreneurship in settings where prevailing assumptions do not apply, we must develop new theories, new models, and new frameworks.

Second, although we focus on the benefits of CBE for less-developed economies, the concept may have wider applications. The notion of the community as enterprise and entrepreneur may yield new and fruitful ways of thinking about entrepreneurship in developed economies, even though it represents a perspective on the extreme of a continuum of ideas. The notion of an entrepreneurial venture as a *"single independent operation linked to other similar operations only through arms-length, contractual exchange relationships"* is also an extreme conceptualization, yet this understanding has led to important insights (Taylor 1999).

Third, because our theoretical model of CBE is based on a documented grass-roots effort in local communities in a variety of settings, it should be significant to policy-makers and practitioners, given the growing interest in entrepreneurship and sustainability as tools for local development. This is particularly important because most efforts to assist in the improvement of developing regional economies have been unsuccessful, primarily because such efforts have either been unmindful of local cultures and values or have been simply charitable programs that failed to address the root causes of poverty (Burkey 1993; Davis 1993).

Against this background, we propose to look into the question of the role of community-based enterprises from two points of view: firstly, its effectiveness to fight against poverty, and secondly, its capacity to trigger other social outcomes for its members. We shall also analyze the prerequisites that allowed the creation of this community-based enterprise and the salient peculiarities of its organizational structure. The study of GMCL, and the way in which it operates at grass-roots level, could provide important lessons for the creation of community enterprises more participative and inclusive in their approach to villagers' needs.

In reference to the use of terminology, we will use the term "community-based enterprise." According to the International Cooperative Alliance's Statement on the Cooperative Identity (2008), a community enterprise is defined as an autonomous association of persons united voluntarily to meet their common economic, social, and cultural needs and aspirations through a jointly-owned (and democratically-controlled) enterprise.

At this point we would like to stress the fact that GMCL is a company, and not a cooperative. These are the two main differences between cooperative and company, which concern the benefit-sharing mechanisms and the governance structure. Concerning the first aspect, in a cooperative, the economic benefits are distributed proportionally according to each member's level of participation, for instance, by a dividend on sales or purchases, rather than divided according to capital invested, as it happens in a company. In reference to the second aspect, in a cooperative, the decisions are taken on the basis of the membership, not on the basis of the capital invested: every member has the right to one vote. The power of the members is not proportional to the number of shareholders owned by the members, as it happens in a company.

From an organizational point of view, the approach of GMCL presents, in its structure, an innovative element, if compared to the one of a cooperative: a cooperative is generally formed by individual producers that joint together to form a new economic entity. In the case of GMCL, this enterprise is formed by different groups/associations of farmers (not individuals). These village organizations, which form

the basis of the enterprise, confer GMCL a strong grass-root community dimension. The particular membership of cooperatives is marked out by a shared interest in a cooperative activity, rather than a shared interest in a community that acts cooperatively, as is the case for GMCL. Our hypothesis is that this element, pertaining the organizational structure of GMCL, gives us evidence of an alternative approach of entrepreneurship, capable of enhancing the social capital and the embeddedness of this enterprise more than in a cooperative form.

The herbal sector is promising, being on the increase. The international market for the medicinal plant trade is estimated at US $ 60 billion, growing at an estimated 7% per year (Ramakrishnappa 2002; CTA 2002). In India, the turnover of herbal medicines is about $ 1 billion (CTA 2002). The Indian market for Ayurvedic medicines is estimated to be expanding at 20% annually (Subrat 2002). Despite the growing performance of the herbal sector, the connection between the enhancement of livelihoods through collection and growth of medicinal plant has still to be thoroughly understood and documented.

From the limited information available, it results that the herbal sector is characterized by price fluctuations and is notoriously exploitative for the primary suppliers. The latter are generally the marginal farmers and laborers.

Although GMCL have not been active for a long time, this initiative seems to have potential from a financial point of view. GMCL had a turnover of $140,000 in 2005–2006 and is expecting $170,000–$180,000 in 2007; while it is still financially small, it contributes an average of $90 annually to the livelihoods of some 1300 families in Karnataka and Tamil Nadu. GMCL also emphasizes partnerships with other stakeholders through a national local health network, including a wide range of groups and organizations (NGOs, research centers, community leaders etc.). Its mission is to train local communities to evaluate their own resources and their knowledge, and to empower them.

GMCL can represent a model of community-based enterprise able to successfully harmonize social and economic objectives.

Against this background, in the following chapters, we will identify how this CBE originated, then analyse the elements which characterise the structure of this CBE looking at its processes and the ways it operates in the market, and finally analyze the impact and the role of this CBE on local communities.

In doing so, our aim is to understand, firstly the prerequisites that allowed the creation of this community-based enterprise, secondly the strong and the weak points of this organization, and thirdly the benefits that it can deliver to local communities.

At this stage, we need to identify key questions which will enable us later to develop our analysis.

1. **What are the key elements that are at the base of this initiative?** *(How was it possible to create this at local level? If we want to start it somewhere else, what are the prerequisites?)*
2. **Which are its main characteristics in terms of structure and functioning mechanisms?** *(Why did it function there? If I want to reproduce it somewhere else, what are the strong points of this organization?)*

3. **What is its impact in terms of local development?** (*What are the benefits it managed to deliver? Up to which point are they relevant for the local communities?)*

2.4 Community Participation and Its Role in Fostering Local Development

In the last four decades or so, the two dominant conceptions of development were modernisation, the traditional model of technology transfer associated with the political right, and dependency, the model associated with the political left (Hobart 1993). Despite their differences, both strands shared the underlying assumption that development was an issue of 'catching up,' and that eventually less developed contexts would achieve the stage of more developed ones. Developed societies stood as 'the model' to be followed, which, coupled with a strong emphasis on the ideology of progress, determined the aspirations and goals of development interventions.

It is now widely acknowledged that development interventions in less developed countries are not just a matter of transferring information and technological from more developed contexts. This top-down approach to development has failed to recognise local resources and the problems involved in the cultural and material differences between contexts (Apfell-Marglin and Marglin 1990). It has also become clear that the developed world is far from being free of the problems that are found in less developed circumstances.

Transformations imposed by conditions of late modernity and globalisation take the problem of development today far beyond the traditional north-south divide, and uncover the importance of understanding each context in its own right. Although it would be a mistake and indeed undesirable, to neglect the enormous disparities between countries of the north and countries of the south, globalisation has taken the problem of inequalities and development to a different level of complexity.

With a few exceptions around the globe, the presence of poverty transcends the traditional boundary of Third World locations. There are pockets of poverty and wealth in most countries today. As globalisation institutes new coexistences between wealth and poverty and threatens traditional communities and ways of life, the recognition of local contexts emerges as one of the key tasks in development programs (Atte 1992).

Without paying attention to local realities and trying hard to understand and integrate local systems of knowledge, community development interventions remain partial. The tendency to undermine local knowledge has been traditionally founded on the belief that development agents 'know best'. Development promoters and educators saw the knowledges they conveyed as the desirable ones, and were inclined to overlook the implicit assumptions embedded in this conception, namely, that there is a hierarchy of knowledges – their knowledge was the 'best' and local knowledge was considered to be 'ignorance'. These hidden assumptions, commonly found in health promotion interventions, give ample support to Foucault's description

of subjugated and dominant knowledges (Foucault 1980). They can also explain the mistrust and resistance, with which local people tend to receive outside workers.

Development initiatives that recognise local representations and ways of life are, on the other hand, more likely to be relevant and to generate sustainable and successful interventions (Atte 1992). There are a number of lessons to be learned from the *experience of context* and the way this experience produces knowledge, expertise, and practices which emerge from, and at the same time respond to, the concrete conditions under which a group of people live. In the case of less developed communities, there exists a long tradition of coping and inventing resources to counterbalance the chronic absence of information, state support, and welfare. Community and development workers now recognise that peripheral communities have developed strategies of survival based on their cultural traditions and local knowledge to respond to the urgent needs they usually face.

In the field of development, networks of solidarity based in neighborhood conviviality and kinship relations have been central to provide care and social support (Seabrook 1986). In the same manner, local knowledge has a great deal to offer. It equips local people with impressive arrangements to cope with the everyday and a vast stock of resources to make the best of it.

These resources are expressive of both cultural traditions, handed down across generations and linked to the identity of a community, and the pragmatics of everyday life, where the dynamics of poverty and exclusion produces its own responses to alleviate hardship. The recognition of this repertoire of assets (Moser 1998) is crucial to establish productive alliances between local communities and development workers. As the communication between different worlds and ways of life increases, and as more dominant worldviews meet peripheral ones, it becomes crucial to establish dialogues between local understandings and the outside researchers, development workers, and scientific practices that penetrate local communities (Agrawal 1995).

The role of local knowledges in community development is a complex issue, however. There will be occasions where local understandings can be detrimental to the well being of local populations. Community and development workers will be familiar with situations where local communities express discourses and practices which are at variance with development interventions.

Thus development interventions in the community can be based on a different assumption: the recognition of different types of knowledge and expertise and the possibility of establishing a dialogue between them with the objective of critical awareness.

Ogawa proposes that every culture has its own science, and refers to the science in a given culture as its "traditional science". Westerners freely acknowledge the existence of indigenous art, music, literature, drama, and political and economic systems in indigenous cultures, but somehow fail to apprehend and appreciate traditional science. According to the same author (1995), we must distinguish between two levels of science: individual or personal science, and cultural or societal science. He refers to science at the culture or society level as "indigenous science" (p. 588). He defines indigenous science as "a culture-dependent collective rational perceiving of reality," where "collective means held in sufficiently similar form by many persons to allow effective communication, but independent of any particular mind or

set of minds" (p. 588). Although we all participate in indigenous science to a greater or lesser degree, longresident, oral culture peoples may be thought of as specialists in local indigenous science.

Our position on "science" is closely aligned with that of Ogawa (1989), who prefers understanding of science, which argues that "every culture has its science," "something like its own way of thinking and/or its own worldview," and gives the following definition: "By science, I mean a rational (i.e., purposeful, good, directed) explanation of science of the physical world surrounding man" (p. 1437). We agree with Ogawa (1989) when he asserts that "Western science is only one form of science among the sciences of the world" (p. 248). Also, the people living in an indigenous culture itself may not recognize the existence of its own science. Hence, it may be transferred from generation to generation merely by invisible or nonformal settings (Ogawa 1989).

Indigenous science, sometimes referred to as ethnoscience, has been described as "the study of systems of knowledge developed by a given culture to classify the objects, activities, and events of its given universe" (Hardesty 1977). Indigenous science interprets how the local world works through a particular cultural perspective. Expressions of science thinking are abundant throughout indigenous agriculture, astronomy, navigation, mathematics, medical practices, engineering, military science, architecture, and ecology. In addition, processes of science that include rational observation of natural events, classification, and problem solving are woven into all aspects of indigenous cultures. It is both remembered sensory information that is usually transmitted orally in descriptive names and in stories where abstract principles are encapsulated in metaphor (Bowers 1993a, b, Cruikshank 1991; Nelson 1983).

Traditional science, long considered little more than unscientific and irrelevant, is increasingly being recognized as a complex and dynamic system of knowledge developed over centuries through investigation, application, modification, and innovation by indigenous and local communities (Kansa et al. 2005). TS is conceptualised in many ways—from its role as a livelihood strategy in poor tribal communities to management implications for contemporary natural resource management (Berkes et al. 2000). Numerous traditional peoples' scientific and technological contributions have been incorporated in modern applied sciences such as medicine. According to Berkes et al. (2000), traditional medicine systems are based on the shared experiences, customs, values, traditions, lifestyles, social interactions, ideological orientations, and spiritual beliefs specific to local communities. The richness and complexity of TS systems stem principally from the fact that traditional science is more than the sum of its parts. These parts articulate or merge to form unique, dynamic, and evolving systems of local knowledge (Gadgil et al. 1993).

Such a conception closely follows Freire's discussion of development projects (1973). While discussing 'extension' which was the word used to describe development projects in the Third World, he makes clear that 'the effort required is not one of *extension* but of *conscientisation* (p. 100). The concept of conscientisation is at the core of Freire's pedagogy, and it has been central to development work in the community in Brazil and Latin America.

Conscientisation is the process whereby critical thinking develops. It contains several stages, starting from 'intransitive thought' where people believe that control

over their lives is out of their hands and fate defines their experience. They do not see their own actions as capable of changing their conditions. God or luck are seen as the way out of their often very poor living conditions. 'Semi-transitive thought' is the next stage towards conscientisation. Here, people partly believe in themselves as motors of chance and to some degree they try to act in order to produce social change. Their understanding of their situation, however, is still fragmentary, insofar as they fail to connect their particular problems to the larger societal determinants underlying single situations.

The final stage, which Freire calls 'critical transitivity,' corresponds to the achievement of conscientisation. It refers to a dynamic relationship between critical thought and critical actions, triggered by the ability to think holistically and critically about one's condition. This level of consciousness is never given but always achieved through a social process of learning characterised by dialogical and participatory relationships. A critically transitive thinker feels empowered to think and to act on the conditions that shape her living.

> According to, "*the now well accepted concept of the awakening of critical consciousness joins the psychological dimension of personal consciousness with its social and political dimension, and makes manifest the historical dialectic between thinking and doing, between individual growth and community organization, between personal liberation and social transformation.*"

In dialogical communication, actors can develop an appreciation of reality which was not there before: they construct awareness about their conditions of living not only for themselves but also for those who work *with* them. It is this awareness that pushes a community into participating action and, in a dialectical way, reinforces the very existence of their community links.

Freire's considerations are similar with a great deal of recent work on development and community projects (Rappaport 1987). The key issues guiding these interventions revolve around the idea of empowering communities to participate both in the construction/consolidation of the relationships that form the community itself, and in larger social arenas where representations and resources are disputed. By participating and consolidating the level of community action, deprived sectors can proclaim/reclaim their interests in the public sphere, reaffirm their identity in relation to other social groups, and pressurise channels of decision making and institutional power to respond to their needs. This level of community participation, which is embedded in a struggle over knowledge, identity and resources, becomes central to thinking about health in conditions of poverty and exclusion.

2.5 Interlinkages Between Ethnodevelopment, Good Governance, Grassroots Organisations and Indigeinity

The important role of local, indigenous, and tribal peoples in development has achieved international recognition through the adoption of the international conventions, such as the Convention 169 of the ILO, or the Convention on Biological Diversity (CBD). However, it is hard for indigenous people, when being far from

political power structures, to be voiced and to exercise leadership in social, economic, environmental, or political national and international arenas. It is also difficult for the outsiders to communicate to these groups and to take hold of their knowledge and practices. It is this paradoxical situation that gave origin to the role of non-governmental organizations (NGOs) and their power as mediators of local knowledge and as defenders of social justice and equity related to the development and governance (Roué 2003).

Alongside with the term "development," recently the notions "governance" and "good governance" are being increasingly used in development literature. The concept of "governance" is known since historical times. It describes the process of decision-making and the process by which decisions are implemented (or not implemented). Governance can be used in several contexts such as corporate governance, international governance, national governance and local governance. The governance holds back and distorts the process of development, and has an imbalanced impact on the poorer sections of society. There is no exhaustive definition of "good governance," and the term is used with suppleness. Depending on the context and the overriding objective sought, good governance has been said at various times to encompass: effective participation, multi-actor partnerships, full respect of human rights, the rule of law, transparent processes and institutions, legitimacy, access to knowledge, information and education, political empowerment of people, equity, sustainability, and attitudes and values that foster responsibility, solidarity, and tolerance.

The emergence of community participation in development and governance processes through grass-roots organisation, such as community enterprises, as a normative principle, has led to the creation of formal mechanisms of cooperation and consultation in many development institutions, but this should not be confused with a linear, cumulative progression toward equitable, democratically administered environmental and development policies. The irreducible complexity of development and governance in the contemporary period is compounded by the paradoxical role of participation in contemporary discourses and practices of sustainable development. The rhetoric of participation and the real practice of constructing participatory regimes of development and governance through these organizations are often strikingly at odds (Casey 2004). Participation in development and governance could be structured in a way that privileges certain actors and tends toward the conservation and reproduction of dominant political and economic structures. At all levels of governance and development, formal participation can be a source of bureaucratic legitimization and substantive exclusion, as much as a source of genuine democratization. As White contends, with regard to the concept of participation more generally: "Participation must be seen as political. There are always tensions underlying issues such as who is involved, how, and on whose terms. While participation has the potential to challenge patterns of dominance, it may also be the means through which existing power relations are entrenched and reproduced. The arenas in which people perceive their interests and judge whether they can express them are not neutral. Participation may take place for a whole range of unfree reasons. It is important to see participation as a dynamic process, and to understand that its own form and function become a focus for struggle."

In the light of such ambiguity that ethnodevelopment has shown in terms of grass-roots appropriation and genuine representation, one can not contend with the apparently positive results of grassroots groups, with their emphasis on justice and equity, in mobilizing marginalized communities. Every grass-roots organisation also requires a critical analysis in terms of its internal structures and functioning mechanisms, which is one of the aims of this book, looking at the community entreprise GMCL in India.

As pointed out above (cf. 2.4) , local knowledge provides a basis for grassroots decision-making, much of which takes place at the community level through indigenous organisations and associations, where problems are identified and solutions to them are determined. There are an innumerable number of such grassroots organizations (GOs). In the South, GOs are typically made up of community members joined together to act on issues that directly impact local livelihoods. These organizations are highly differentiated according to size, structure, organizational skills and capacities, motivations and goals, ideological and cultural orientations, and legal status. GOs can be formally constituted membership-based NGOs with clear structures of leadership and accountability or, alternatively, they can take the form of social movements with more fluid structures of membership and participation. Many important and vital groups in the latter category are not captured in the official data and may be excluded from formal recognition and opportunities for participation as a result (Bryant and Bailey 1997: p. 134).

Grass-roots organisations have played a major role in promoting the inclusion and advancement of local knowledge in national and international arenas. Being an actual topic in political, social, and economic international arenas, "local knowledge" is often defined from a constructivist position: the political dimension of the international validation of "local knowledge" has been discussed by stakeholders with an international understanding of the problems, which translate local knowledge into the "global" scientific discourse (cf. Chap. 3). As points out exactly, in these discussions, "local knowledge" corresponds to a range of cultural fragments rather than being described as the whole culture of the people. He further argues that those fragments have been given a wide reputation over the past years by stakeholders with their own interest and their own concern about the "global" development crisis. The ambiguity here is that "local" knowledge eventually exists only in relation to "global" knowledge. Its raison d'être and utility are confirmed though critical thinking about development within the two main contexts: the search of solutions to the global development crisis, and the cultural impacts of globalisation. There is, however, the danger that once practices and useful knowledge are taken over by developers, local and indigenous peoples will have been expelled of their own knowledge without acquiring the political power and leadership in the political world order (Escobar 1995). Another risk is that Western science and ideology may transform local knowledge and practices, by creating a division between techniques and the cosmic, holistic worldview that underpins thus knowledge systems.

As we detailed above, social, cultural, and economic development's and environmental protection's interest in participatory approaches is often being framed by

neoliberal development (Mawdsley et al. 2002). Development institutions were composed of western consultants, and scientist, who following contributed to development failures because the local knowledge that enables people to take actively part in the design, implementation and monitoring of their own work is not recognised. Capacity building carried out by outside experts will fail "because the attitudes of the expert prevent people from thinking for themselves." Although neoliberalism is present in the social development agenda, and is shaping the economic and also environmental domain, in some contexts, this occurs in ways that allows for indigenous people to challenge and participate in local environmental and development policy implementation. As we described above (cf. 2.4), since the last few decades the concept of social capital, as "norms and social relations embedded in the social structures of society that enable people to coordinate action and achieve desired goals" (Narayan 1999), has shaped neoliberal social development, and new social development models focussed on stakeholder participation and supporting training of indigenous people as development experts has thus developed social capital that is "local" or "indigenous." In a wider context, this concept has become central to the formulation of ethnodevelopment policy that focuses on providing ethnic groups with the means to partake in development on their own terms (Partridge and Uquillas 1996). Laurie et al (2005) explored the relationship between indigeinity, the creation of indigenous experts through grassroots social movements' engagement in popular training that emphasises indigenous knowledge, and the institutionalisation of ethnodevelopment. They argue "that the current popularity of ethnodevelopment as a paradigm not only reflects donor interests in enhancing indigenous social capital under neoliberal visions of development, but is also explained by its ability to respond to the development-with-identity demands of indigenous social movements and key advocates working within NGOs, government and multilateral institutions" (Laurie et al. 2005: 477).

Parallel to this shift in development policy, new indigenous expert elites are emerging from the ranks of the GOs and becoming important advocates in the political development, the socio-economic development and environmental protection arena (Brysk 2000). Our analysis looks at the nature of such indigenous institutions, and the way in which they challenge state forms of development. In our understanding of such grassroots institutional identities, we argue that indigeneity constructs this issue through complex processes of identification based upon tradition and cultural identity. If relevance here is the concept of governmentality and its position in the context of indigenous politics and development, Watts (2003) looks at the invention and re-invention of traditional and local knowledge in the Ogoni struggle in Nigeria. Questioning the complex links between governmentality and ethnodevelopment, Watts (2003:24) argues that the "governable spaces of indigeneity" become vehicles for political claims focused on local government and the state. While we agree with Watts (2003) and his argument on the nature of spaces of indigeneity being governed through complex processes of culture, territory, and resources (which follows Foucauldian's notion of governable space, our book goes further to suggest that governable spaces of indigeneity are multidimensional and involve complex socio-cultural features and ideologies.

In many parts of world, local, indigenous, and tribal people have mobilised to contest harsh neoliberal politics and to propose alternatives to radical restructuring (Cornwall 1998). Neoliberal measures to open markets in land, water, and to promote non-traditional exports (such as flowers in Columbia), have profound impacts on rural well-being, especially marginalised groups, such as tribal and indigenous people. Indigenous responses to such pressures include collective actions such as alternative nationwide protests, coalition building with other social actors, and strategic essentialism. Indigenous engagement with cultural politics through collective action has generated new ways of presenting local cultures, knowledge, and forms of organisation, often within regional, national and even transnational spheres (Brysk 2000).

We agree with, who states that individuals only commit to collective action when they enjoy a "distinct and stable sense of self" and when they recognise themselves as part of a collectivity. Kelsall (2000: 3) further developed this argument by stating that: "Stable identities of this kind are generated when the circumstances of individuals correspond to the meaningful categories through which they interpret the world, and when the latter coincide with the social institutions through which that worldview is lived out. In such a context material conditions make possible meaningful action of a socially sanctioned kind which is expressed through the institutions which generate and are generated by that action. Thus, through social participation, the individual acquires a sense of competence, usefulness and recognition, all of which contribute to the maintenance of self. Individuals will commit to collective action in defence of those institutions, or in pursuit of their evolving self-definition." We agree with Kelsall, and as we shall show in the following chapters that participation in collective action and commonly determined goals are crucial aspects of empowerment, local development and self-realisation.

2.6 Civic Engagement, Collective Action, Networks and Women's Development

The concept of cooperativisation, a crucial point of Gandhian philosophy, has been reinforced in recent years by the group approach in rural development schemes, incorporated in contemporary concepts of social capital, civic engagement, and networking in India. Widely applied in rural women's development schemes, the group approach in gender entrepreneurship is one operational expression of such concepts. The increasing success of the group approach and 'networking' in enhancing the gender development through entrepreneurship activities has turned them, in the last few years, into paradigms often used by developers without a careful examination of the complexities of the local context and the social challenges (Torri 2010). One example of this approach is represented by the creation of self-help groups (SHGs), which are one form of implementing microcredit schemes to address poverty among women. The SHGs in countries such India is very high; here, the number of these groups is estimated to be more than a million. These village

organizations involve more than 120 millions of people, 90% of whom are women (Hofmann and Marius-Ganou 2007). When analysing the SHG movement in India, mainly engaged in microcredit and group entrepreneurial activities, the focus is often put on its economic effectiveness (namely to enhance women's incomes) (Tesoriero 2005). Even though the economic situation of women is vital to any social or community development, it is critical, however, to also look at the performance of these forms of group entrepreneurship from a environmental point of view (Brewster et al. 2006) and a social point of view, in order to locate them within a broader socio-environmental and policy context. This is what the following chapters of this book set out to examine.

In specific locations, certain self-help groups are characterised by low performance and several challenges at social level, as seen in Thorp et al. (2003), who noted that while groups are fundamental to economic, social, and political outcomes, the chronically poor are usually disadvantaged in group formation due to several reasons, including their lack of assets and rights. Sometimes the various constraints on poor rural women in specific contexts are not adequately recognised, due to the tremendous emphasis on the group, a fact that makes it impossible for the SHG to ensure their success in every rural context.

Gender disparity and discrimination are essential characteristics of rural society in India (Rath 1996). The salient features of rural women's marginalisation are low levels of literacy, low purchasing power, poor health status, low participation rates in the formal economy, and low levels of empowerment in the family, as well as in the society (Thorp et al. 2003). Although Indian society is characterised by multiple hierarchies, women, as a group or a set of groups, are commonly seen as homogeneous, which eases development interventions to operationalise (Rankin 2001). Consequently, criticisms of development policies for women have emerged, and a major criticism of the policy has been from women's groups. According to Rajagopal and Mathur (2000), "contrary to the statements made by the state officials, neither their views nor the interests of grass roots women have been taken into consideration at the time of policy formulation."

Similarly, Nandy Upadhyay et al. (2002) pointed out that: "people have to be looked [at] as the fundamental resource and not as problems for whom planning is devised." We agree with Kothari (2002) when we stated: "Participatory processes, much touted by governments but often largely restricted to the occasional consultation, rarely go all the way in terms of placing communities at the centre of conceptualising, planning, implementing, and monitoring conservation programmes and policies." Such processes can be powerful tools for local social and economic development because of the sense of local empowerment. Group formation and networking, following the example of poorer communities elsewhere in India, have been the hallmarks of micro-enterprise development amongst rural women in India (Beaumont et al. 1992; Creevey 1996).

Yet, it has been noted that while groups are fundamental to economic, social, and political outcomes, the chronically poor are often underprivileged in group formation, due to several reasons, including their lack of assets and rights (Thorp et al. 2003). Uncritical acceptance of the group approach, as one that generically empowers

all women and materially improves their lives, is a manifestation of a communitarian vision. Bauman (2001: 1, 10) has criticised, from a sociological point of view, the "feel good" sense or "naive immersion in human togetherness" that the word 'community' conveys. The self-help groups are indeed communities of purpose, but fail to take into consideration the plurality of issues within the category of 'women.' Long ago, liberal feminists expressed anxiety that the natural rights of individual women might become subsumed in strong 'community schemes' (Gutmann 1985). In declaring the group approach as the only mode of poverty alleviation and empowerment, a similar discourse has been entrenched in GAD schemes in rural India. This discourse neglects to analyse the gender relations that cause women to be subordinated, which, according to Kabeer (1994), must inform any effort to empower women (Moser 1989).

Contemporary developmental literature is rich with instances of participation. According to, such participation and cooperation have now come to be regarded as essential to the accumulation of social capital, captured through social relations by virtue of actors' connections, enabling access to resources in the networks or groups of which they are members. As pointed out earlier (cf.Chap. 2; Sect. 2.2.), Bourdieu distinguished between cultural capital and social capital (1972/1977, 1983/1986), and Perez- Diaz (1993, 1995, 2002) differentiated between civil and uncivil social capital. Whichever way it is defined, social capital is generally considered to be intrinsic to social functioning, in that it enables the members of a society to act collectively in solving their problems and working for their common good (Cox 2002, 337). Members of a society, affected by each other's actions and those of public authorities, develop interest in improving their situation by pooling resources and sharing costs, which is the essence of collective action (Garber 1993).

Collective action has been defined in different ways by various scholars. Mwangi et al. (2008) see collective action as a "voluntary action taken by a group to achieve common interests," whereas Vermillion (2001) describes it as "the coordinated behaviour of groups toward a common interest or purpose," and calls collective action "when more than one individual is required to contribute to an effort in order to achieve an outcome." All these definitions share the commonality that collective action involves more than one person and is directed towards the achievement of a certain common goal or interest shared by them, and which cannot be obtained by an individual acting on his own. However, as pointed out by, "there are different points of view as to what constitutes the collective, and to what extent the action reflects a common purpose. The collective may take several forms, ranging from a formal organization to the mere observation of a set of rights and responsibilities, related to the use of a common resource" (Mwangi et al. 2008). Furthermore, some who study collective action regard institutions of collective action as social entities acting as a homogeneous unit, whereas others hold the view that collective action is an aggregate or a coalition of actors. States that individuals only commit to collective action when they enjoy a "distinct and stable sense of self," and when they recognise themselves as part of a community. Kelsall (2000: 3) further developed this argument, stating that: "Stable identities

of this kind are generated when the circumstances of individuals correspond to the meaningful categories through which they interpret the world, and when the latter coincide with the social institutions through which that worldview is lived out." Consequently, through social participation, the individual acquires a sense of competence, usefulness, and recognition, all of which contribute to the maintenance of self. Individuals will commit to collective action in defence of those institutions, or in pursuit of their evolving self-definition. On the opposite, sees collective action in institutional economics not occurring in a long term process; according to him, any activity is collective action if two or more agents need to come together and make claims over a wider population or state apparatus. Scholars in experimental research have shown that, in several circumstances, individuals spontaneously choose to cooperate with others in order to gain mutual benefits (Ostrom 2000). As we shall demonstrate later on in this book, participation in collective action and commonly determined goals is a crucial aspect of self-perception and self-realization (Kelsall 2000; Kerr 2002).

Another metaphoric concept experiencing a recent rise is the 'network,' its roots lying in the formulations of Radcliffe-Brown proposed early in 1940 in the USA, and by in the UK. Newly independent India was, at that time, toying with centralised Soviet-style planning, while trying to retain the rural ties that bind and provide the foundation of Indian society. Although networks of social cooperation may facilitate collective action has criticised networks because they are theoretically systemic and empirically mechanistic. In his view, even though 'network' is a sociologically viable concept, it should be confined to formal, professional domain, whereas 'social' pertains to the informal sector. Accordingly, he suggested that 'social circle' rather than 'social network' might conserve better the substantive meaning of the informal engagements that development schemes attempt to capture.

Cooperatives have had a long history in rural development planning in India (see, for example, Schrijvers 1999; Walker 2001). In 1904, the colonial British Government enacted laws to encourage the formation of cooperatives in order to free the farmers from the informal debt-traps set by mahajans or moneylenders. Independent India too encouraged cooperativisation to secure scale economies of production for the rural poor, and aimed for the elimination of middlemen to increase efficiency, essentially summarised by the Maclegan Committee's assertion of cooperativisation as the effective means of harnessing the power of scale by an individual through association with others. The Cooperative Planning Committee (on the eve of independence in 1946) emphasised the aspect of voluntary association with common economic aims. The groups of women in DWCRA may also be seen as an exercise with parallels to cooperativisation, although the SHGs are not formally institutionalised cooperatives.

Participation in rural cooperatives is often seen as an instrument for women empowerment, as it may offer new opportunities to obtain financial skills and create economic enterprises (Malhotra and Mather 1997).Yet, statistics show that the participation rate of women in cooperatives is lower than for men, especially in rural farming or credit, which tend to be synonymous with men's activities (Torri 2010).

However, the importance of cooperatives for ensuring food security for poor families, as well as for women remains great. There are spectacular success stories of using the scale dimension in rural development in India. For example, the National Dairy Development Board's Amul model of cooperativisation has made a 'white revolution' of sorts. In 1995, there were 540,000 rural women in 950 dairy cooperatives in Gujarat, making Amul the largest milk producer in the world.

Examples of recent geographic and ethnographic research on cooperative formation and survival are common (for example, Mutersbaugh 2002). It must be remembered that some recent research on micro-credit in South Asia has shown that the availability of credit can increase women's work burdens, and that men often control the income generated by the credit that women receive (Rankin 2002, p. 32). Acknowledging the complex dimensions of entrepreneurship and micro-credit, this book does not deny the significant achievements of these projects but intends to critique the sweeping use of group approach in gender entrepreneurship by highlighting how such approaches could enter in contrast with women's needs and aspirations in particular contexts, such as the one analysed with IMCL.

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Chapter 3
Traditional Ethnobiological Knowledge and Bioprospecting

Abstract Benefit-sharing between the users and the providers of biological resources and the knowledge associated with them has been a topic of intense, increasing concern in bioprospecting in recent years. This is due to the large amount of genetic resources that have commercial viability in a number of formal sectors, including pharmaceuticals in both industrialised and development countries.

Bioprospecting activities have been characterised by a dichotomic vision of the local communities, seen either as victims of "biopiracy" or as potential beneficiaries of benefit-sharing agreements which often have proved to be ineffective in promoting development and equity at local level.

The chapter questions whether novel benefit-sharing arrangements might give rise to a new form of bioprospecting activity. It also raises the question of whether and how an alternative representation of bioprospecting "from below" can be an instrument to enhance the local livelihoods of communities and promote their empowerment and capacity building.

Keywords Bioprospecting • Benefit-sharing • Ethnomedicine • Empowerment • Communities

3.1 Indigenous People and Traditional Knowledge

3.1.1 Definitions and General Issues

Over the past 20 years, indigenous people have become the focus of increasing interest and international debate. The United Nations has been a primary forum for these discussions through ECOSOC's Working Group on Indigenous Populations, the Year – and subsequently Decade – of Indigenous People, the proposed Permanent Forum for Indigenous People, and the Commission on Sustainable Development.

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Indigenous and traditional communities figure prominently in the Earth Charter, the Convention on Biological Diversity (CBD), Agenda 21, and the Convention on Desertification.

The International Labor Organization (ILO) Convention 169 'Concerning Indigenous People in Independent Countries' (1989) identifies indigenous people as:

(a) Tribal people in countries whose social cultural and economic conditions distinguish them from other sections of the national community, and whose status is regulated wholly or partially by their own customs or traditions or by special laws or regulations, and

(b) People in countries who are regarded by themselves or others as indigenous on account of their descent from the populations that inhabited the country, or a geographical region to which the country belongs, at the time of conquest or colonization or the establishment of present state boundaries and who, irrespective of their legal status, retain some or all of their own social, economic, spiritual cultural and political characteristics and institutions.

Indigenous peoples are defined by the Special Spokesman of the UN Economic and Social Council Sub-Commission on Prevention of Discrimination and Protection of Minorities in the following manner:

> Indigenous communities, people and nations are those which, having a historical continuity with pre-invasion and pre-colonial societies that have developed on their territories, consider themselves distinct from other sectors of the societies now prevailing in those territories, or parts of them. They form at present non-dominant sectors of society and are determined to preserve, develop and transmit to future generations their ancestral territories, and their ethnic identity, as the basis of their continued existence as people, in accordance with their own cultural patterns, social institutions and legal systems (ECOSOC 1986).

At present, most indigenous people live in developing countries where the major part of the world's rainforests and wetlands are located. According to the United Nations' estimates, there are over 300 million indigenous people in existence throughout the world. The areas which present the greatest biodiversity are also areas of the greatest linguistic and ethnic plurality. Tropical rainforests, accounting for only 7% of the planet's surface, are home to at least 1,400 distinct indigenous and traditional people, whose ecosystems contain between 50% and 90% of the world's known species (Harmon 2002).

The terminology surrounding the study of local knowledge is rich, although the choice of language often reflects the disciplinary context within which the work is grounded.

'Knowledge' is a logical interpretation or explanation of data, acquired either personally or from external sources. We use the term 'understanding' to mean knowledge which is specific to the person who interprets it, regardless of whether they can articulate it or not. 'Knowledge' is also used to mean understanding that can be articulated and so can be recorded independently of the interpreter, thus making its utility more general (Sinclair and Walker 1998). The knowledge a specific group of people has about a specified domain constitutes a 'knowledge system.'

Thus, 'local and indigenous knowledge' refers to the cumulative and complex bodies of knowledge, know-how, practices, and representations that are maintained and developed by societies with extended histories of interactions with their surrounding natural environment. These cognitive systems are integral to a cultural complex that also encompasses language, systems of classification, resource use practices, social interactions, rituals, spirituality, and worldview. For rural and indigenous peoples, local knowledge informs decision making about fundamental aspects of day-to-day life. These unique ways of knowing are important components of the world's cultural diversity.

Many different terms are used to refer to this knowledge. These include:

- Traditional ecological knowledge (TEK)
- Indigenous knowledge (IK)
- Local knowledge
- Rural peoples' knowledge
- Ethnobiology/ethnobotany/ethnozoology
- Ethnoscience/folk science/indigenous science

These many terms coexist because the wide range of social, political, and scientific contexts have made it all but impossible to for a single term to be suitable in all circumstances.

The distinction between local people's knowledge and practice has not always been recognized in the literature on this subject. This is most notable in the body of work on ITK (Indigenous Technical Knowledge), which often describes people's actions rather than the underlying rationale driving them (IDS 1979). Knowledge alone does not necessarily lead to action; conditions and constraints due to cultural norms, religious obligations, and economic and policy circumstances can all influence farmers' decisions, forcing them to act in an ecologically irrational manner.

The different nature and forms of expression of the information embraced by TK can make it difficult to agree on a legally and scientifically accepted definition.

According to Warren (1991), *Indigenous Knowledge is the local knowledge – knowledge that is unique to a given culture or society. IK contrasts with the international knowledge system generated by universities, research institutions and private firms. It is the basis for local-level decision making in agriculture, health care, food preparation, education, natural-resource management, and a host of other activities in rural communities.*

Flavier et al. (1995) defines Indigenous Knowledge as, *"the information base for a society, which facilitates communication and decision-making. Indigenous information systems are dynamic, and are continually influenced by internal creativity and experimentation as well as by contact with external systems."*

Traditional Ecological Knowledge (TEK) is another term used to describe those aspects of IKS that are directly related to management and conservation of the environment. Johnson (1992) defines TEK as *"a body of knowledge built by a group of people through generations living in close contact with nature. It includes a system of classification, a set of empirical observations about the local environment, and a system of self-management that governs resource use."*

TEK is far more than a simple compilation of facts (Gadgil et al. 1993; Johnson 1992). It is the basis for local-level decision-making in areas of contemporary life, including natural resource management, nutrition, food preparation, health, education and community and social organization (Warren et al. 1995). TEK is holistic, inherently dynamic, and constantly evolving through experimentation and innovation, fresh insight, and external stimuli.

According to this definition, traditional knowledge systems are based on the shared experiences, customs, values, traditions, lifestyles, social interactions, ideological orientations, and spiritual beliefs specific to local communities. Traditional knowledge also incorporates knowledge of ecosystem relationships and a code of ethics governing the use of the environment. This code includes rules and regulations on ecosystem, human-wildlife interactions, and social relationships, since the latter continue to be established and reaffirmed through hunting and other activities on the land. Therefore, the richness and complexity of traditional knowledge systems stem principally from the fact that traditional knowledge is more than the sum of its parts. These parts articulate or merge to form unique, dynamic, and evolving systems of local knowledge.

TEK is conceptualized in many ways, from its role as a livelihood strategy in poor tribal communities (Gupta 1999), to its management implications for contemporary natural resource management (Johannes 1989; Grenier 1998; Berkes 1999). Berkes et al. (2000) explores the role of TEK in managing the processes and functions of complex socio-ecological systems, as parallel to adaptive management. He further suggests that TEK is largely dependent on hierarchal social mechanisms.

Slikkerveer (2000) provides several examples of TEK, as well as an extensive treatment of the historical context and principles that underpin the systematic study and evaluation of traditional knowledge systems. This is generally known as ethnoscience, and embraces the now familiar fields of ethnobotany, ethnozoology, ethnoecology, and ethnobiology.

A generic conception of local knowledge systems in the context of natural resources management can also usefully distinguish between pragmatic knowledge about how the natural world works (predicting outcomes of management interventions), and cultural values that modify the desirability of various outcomes. The latter distinction is controversial, particularly when viewed from the anthropological tradition, which sees all knowledge as being culturally embedded (Ellen and Harris 1996).

Accepting these distinctions, knowledge of the natural world can be seen to comprise ‘explanatory knowledge’ (concerned with ecological processes) and ‘descriptive knowledge’ (concerned with the properties of the various components of agroecosystems, such as trees, crops and soils). This contrasts with ‘supernatural knowledge,’ which consists of a higher level, often a spiritually based explanation for the order of things. The latter may form the basis of the rules, norms, and values assigned by culture, religion, and other moral or social imperatives.

There is a long and active tradition of defining local knowledge systems, as opposed to scientific knowledge (Lévi-Strauss 1966; Sillitoe 1998; Berkes et al. 2000). Various terms are encountered in the literature referring to this dichotomy of

'formal' vs. 'informal', 'western' vs. 'indigenous' and 'outsider' vs. 'insider'. However, the problem with this sort of frame of analysis is that, in most cases, the knowledge of local people is not some pristine-indigenous perception of the world. It is more likely to have been interacting with external knowledge, at least to some extent, for the last 500 years or so (Agrawal 1995).

Until recently, little attention was given to "local innovation" and to management practices and institutions that local communities have developed themselves. This refers to the dynamics of indigenous knowledge, the knowledge that has developed over time within a social group, incorporating both learning from the experience of earlier generations and knowledge that has been gained in the meantime from whatever source, and has been fully internalised within local ways of thinking and doing (cf. Chap. 5).

It is very difficult, if not impossible, to trace the origin of knowledge. Attempts to generalise fundamental differences in local and scientific knowledge are fraught with difficulty. Assertions that local people's knowledge is heuristic (based on rules of thumb that may have no explanatory basis) have not been borne out by research. It has been shown, in a range of cultural and agroecological contexts, that some of the understanding that farmers have involves mechanistic explanations of natural processes comparable with, and often complementing, scientific knowledge (Richards 1994; Ford and Martinez 2000). For these reasons, we prefer to use the term 'local ecological knowledge' to refer to knowledge about agroecology held by people living in a particular locality. 'Locality,' in this sense, may be defined socially, as well as geographically.

Such local ecological knowledge comprises and/or acquires knowledge both directly and indirectly. Typically, it is the locally derived elements that differ from scientific knowledge in their level of aggregation (grouping according to perceived pertinence). Whereas science has emphasized a narrow analysis, farmers tend to think more holistically, with limits imposed on their analysis to what they are able to observe and experience. This creates a specific framework in local knowledge of natural processes across cultures, as well as a framework in terms of how local knowledge contrasts with scientific understanding.

3.1.2 Use and Importance of Traditional Knowledge

Theoretical predictions and empirical support suggest that the practice of what we today call 'sustainable use and management' of resources is widespread among local communities and contributes to biodiversity conservation through the creation of habitat patterns (Smith and Wishnie 2000). Many of the world's richest areas of biological diversity have for millenia been and continue to be inhabited and managed by indigenous peoples (Colchester 1994; Pimbert and Pretty 1995; Redford and Stearman 1993).

Some Community Biodiversity Conservation scholars consider the use of local knowledge systems, such as Traditional Ecological Knowledge (TEK), as an

enabling element that leads to the success and durability of Community Biodiversity Conservation.

Community-based conservation has recently emerged as an innovative institutional response in meeting the perceived conflicting goals of poverty reduction and biodiversity conservation. It is in fact recognized that an important component of community-based conservation is the drawing on traditional ecological knowledge held by local people. This is already proving its value in the management of local resources.

This concern emerges from the presumed link between traditional knowledge and conservation and development (Orlove and Brush 1996; Warren et al. 1995; Chambers et al. 1989). Rural communities depend heavily on natural resources for their livelihood. In turn, the long term sustainable use of such resources, such as water and forests, depend on local people's knowledge, management, and ability to maintain and utilise them.

Initiatives of biodiversity conservation can learn a great deal from context-specific local knowledge and institutional mechanisms, such as cooperation and collective action, intergenerational transmission of knowledge, skills and strategies among the villages (Pandey 2002). International and national development agencies have recognized the value of the participative approach to decision-making for sustainable development.

During the past decade, a rapidly growing set of evidence indicates a strong relationship between indigenous knowledge and sustainable development. *"Serious investigation of indigenous ethnobiological/ethnoecological knowledge is rare, but recent studies……show that indigenous knowledge of ecological zones, natural resources, agriculture, aquaculture, forest and game management, to be far more sophisticated than previously assumed. Furthermore, this knowledge offers new models for development that are both ecologically and socially sound"* (Posey 1997).

It has been confirmed by some researchers that traditional knowledge related to the habitat contributes to ecological adaptation and could be used to help design policies for conservation (Berkes et al. 2000; Posey 1999; Colchester 1994). Development agencies are beginning to review the role of indigenous knowledge at policy level in the development process. Titilola has demonstrated the cost-effectiveness of adding indigenous knowledge components into development projects. Lalonde has completed two reports on this topic for the Canadian International Development Agency. The World Bank stresses the role of indigenous knowledge for agricultural development (Warren 1991).

Several studies introduce the complementary importance of the indigenous knowledge, which stems from cultural diversity in the management of natural resources. It is often stated [1]that the existence of biological diversity and cultural diversity are linked. Socio-cultural diversity contributes to the maintenance, and to

[1] The *Global Biodiversity Strategy*, for example, includes as one of its ten principles for conserving biodiversity the principle that "*Cultural diversity is closely linked to biodiversity. Humanity's collective knowledge of biodiversity and its use and management rests in cultural diversity; conversely, conserving biodiversity often helps strengthen cultural integrity and values"*.

some extent, formation of biodiversity. Because their relationship is interactive (Rossler 1993), it is plausible to assume that biological diversity gives rise to the diversification of cultural practices.

Traditional knowledge is also important to its holders as an integral part of their cultural heritage. Similarly, there is a growing recognition that indigenous people have rights to control and protect this traditional knowledge in the form of intellectual property, as recognised in the UN Draft Declaration on Indigenous Rights. Because the structure and content of traditional knowledge is intimately linked with local bioresources and ecosystems themselves, the protection of rights to cultural heritage is closely linked to the protection of the environment and living resources of indigenous and local communities.

One of the significant advances of the Convention signed in 1992 was to recognize the strong relationship between biological diversity and cultural diversity. This means that one of the best ways to conserve biodiversity is to ensure fair conditions of living, reproduction, and development to local and indigenous communities. This objective can be achieved, according to the Convention, through the guarantee of their integral rights, rights over their lands, natural resources, and traditional knowledge.

3.1.3 An Example of Traditional Knowledge: Traditional Medicine

3.1.3.1 Definitions and General Issues

An important area in which local knowledge plays a major role is in traditional medicines, or ethnomedicine.[2] The WHO defines traditional medicine as being the sum total of knowledge, skills, and practices based on the theories, beliefs and experiences that are indigenous to different cultures, which are used to maintain health, as well as to prevent, diagnose, improve, or treat physical and mental illnesses. In some Asian and African countries, 80% of the population depend on traditional medicine for primary health care. Globally, approximately 85% of the traditional medicines used for primary healthcare are derived from plants (Hamilton 2004). Since natural remedies are not only cheaper than modern medicines, but are often the only medicines available in remote rural regions, the World Health Organization (WHO 2005) estimates that more than 80% of the world's population uses natural plant remedies and other related forms of traditional healing as their primary mode of

[2] Biomedical literature refers to the use of traditional medicines as *phytotherapy*. Traditional medicine and traditional healers form part of a broader field of study, classified by medical anthropologists, as *ethnomedicine*. According to the definition of the World Health Organisation (WHO), **traditional medicine** is *"the sum of all the knowledge and practices, whether explicable or not, used in the diagnosis, prevention and elimination of physical, mental or social imbalance and relying exclusively on practical experience and observations handed down from generation to generation, whether in oral or in written form."*

healthcare. Anyinam (1995) provides an overview of the links between ethnomedicine and the biotic environment, giving many examples of the kinds of cultural perceptions and practices that intertwine with ecology.

An important part of TRM knowledge refers to the properties of natural *materials* used in their wild form, or as part of a preparation or mixture. Such materials include plant based or "*herbal medicines,*" as well as animal parts and minerals. "Folk" traditions, as well as other systems of TRM, use a large number of medicinal plants. As a result of this extensive use of plants,[3] the concept of TRM is more often known as being linked to plant-based medicines.

Because traditional medicines use biological resources and knowledge of traditional groups, it is often linked to biodiversity conservation and indigenous peoples' rights over their knowledge and resources (Timmermans 2003).

Although they are based on natural products, indigenous medicines are not "found" in nature. They are products of traditional knowledge. Elisabetsky (1991) explains: *"To transform a plant into a medicine, one has to know the correct species, its location, the proper time of collection (some plants are poisonous in certain seasons), the solvent to use (cold, warm or boiling water; alcohol, addition of salt, etc.), the way to prepare it (time and conditions to be left on the solvent), and finally, posology (route of administration, dosage)."*

Thus, TRM includes knowledge concerning medicines and their use (appropriate dosage, particular forms of administration, etc.), as well as the procedures and rituals applied by healers as part of their traditional healing methods.

The codification of TM varies significantly. A distinction can be made, particularly in Asia, between the *codified* systems of traditional medicine, and *non-codified* medicinal knowledge, which includes "folk," "tribal," or "indigenous" medicine (Koning 1998, p. 263). "Folk" medicine is based on traditional beliefs, norms, and practices at household level, which are transmitted through oral tradition.

Systems of TRM codified in writing are often sophisticated systems of medicine supported by theories and rich experience. Such TRM is often widely diffused on a national scale as well as beyond national borders, as in the case, for example, of Traditional Chinese Medicine (TCM), *Ayurveda*, *Unani*, *Tibetan*, *Mongolian,* and *Thai* traditional medicine.

In some cases, different TRM systems coexist within the same country. In India, for instance, the orally transmitted "folk" system practiced by village physicians/folk healers and tribal communities, coexists with "scientific" (*Sasthreeya*) systems, such as Ayurveda, Sidha, Unani, and Amchi, which are based on organized, codified, and synthesized medical wisdom with strong theoretical and conceptual foundations and philosophical explanations (Pushpangadan 2002), and medicine is limited by economic and cultural factors.

[3]In India, for instance, the codified systems of medicine utilize about 2,000 plant species for medicinal purposes, while the tribal communities, who live in and around the forests, utilize over 8,000 species of plants, most of which are otherwise not known to the outside world (Pushpangadan 2002, p. 5).

Local health traditions are mostly undocumented and oral in India (cf. also Chap. 5). These oral, or folk medical traditions, are extremely diverse, since they are rooted in natural resources located in so many different eco-systems. Ayurveda is predominant among India's traditional health systems. It runs parallel to the modern health care sector and has a 70% share of the formal medicine market. Ayurveda manufacturing units can be broadly classified into the organized and the unorganized sectors. The organized sector consists of both large and small manufacturing units.

3.1.3.2 Possession, Evolution, and Disclosure of Medicinal Knowledge

On the basis of possession, knowledge may be categorised in individual knowledge, distributed knowledge, and communal knowledge. In some cases, TRM knowledge is produced by individuals without any interface with the community or outsiders. It may be held by individuals ("individual knowledge").[4] For instance, healers use *rituals* as part of their traditional healing methods, often allowing them to monopolize their knowledge, despite disclosure of the phytochemical products or techniques used (Bhatti 2000).[5] In addition, individuals continuously improve or innovate based on existing knowledge.

In other cases, knowledge is in the possession of some but not all members of a group ("distributed knowledge"). Knowledge is asymmetrically distributed among individuals within a group, even though such individuals may not be aware that others share the same knowledge (Bonabeau and Theraulaz 1994). "Individual" and "distributed" knowledge are often interconnected. In some TRM systems, healers compare notes and share remedies across quite wide geographic areas.

Finally, certain knowledge may be available to all the members of a group ("common knowledge"). In such a case, the knowledge is freely available to its members, although it may be concentrated among the older members of the society. In every community, for example, there are plants, which are well known to have some medicinal properties.

Traditionally, the attitudes towards the appropriation and sharing of knowledge vary significantly among different local/indigenous cultures. In some cases, a strong sharing ethos prevails, leading to the rejection of any form of individualistic Western style appropriation. In other cultures, the concept of knowledge as a property exists, with some degree of sale or exchange of knowledge as a commodity (Dutfield 2000).

[4] A review of anthropological literature reveals that certain authors suggest that concepts close or equivalent to individual forms of IPRs are quite common in indigenous and traditional proprietary systems (see, e.g. Dutfield 2000). According to one view, the right of an indigenous inventor or custodian of TK should not be sacrificed on the altar of collective ownership, since this would infringe on fundamental human rights.

[5] The extent to which such *prima facie* individual knowledge can be truly classified as individual knowledge depends on other factors, as discussed below.

Nevertheless, the possession of knowledge by individuals does not mean that such knowledge is perceived by communities as not belonging to them. Although at any one time, knowledge may only be held by a handful of people with special roles in the community, in the course of the history of that community, it becomes essentially communally held knowledge. This is because those with the special knowledge do not "own" it as such, and many have obligations to share the knowledge within the community. There may exist, for instance, community regulations for when the information must be passed, such as during initiation rituals. These features indicate slight but important differences between the meaning of individual property in Western culture, and knowledge held by individuals within a non-Western community context.

Much TRM has been used for generations and has been passed on inter-generationally, as indicated in the WHO definition mentioned above. However, TRM is not a static body of knowledge; it continues to evolve with the practices of the individuals/communities that hold and use it (Correa 2000, p. 242). TRM, like other bodies of knowledge, is built on incrementally by improvement on and additions to old knowledge. Thus, TRM consists of knowledge received from the past and handed down from generation to generation, but also includes recent knowledge that may be the product of deliberate experimentation and observation. Thus, healers in traditional/ indigenous communities do contribute to the pool of existing knowledge. Moreover, formal and informal research takes place within codified TRM systems.

The Canadian Indigenous Peoples Organization, the Four Directions Council, has suggested that, *"What is 'traditional' about traditional knowledge is not its antiquity, but the way it is acquired and used. In other words, the social process of learning and sharing knowledge, which is unique to each indigenous culture, lies at the very heart of its 'traditionality'. Much of this knowledge is actually quite new, but it has a social meaning, and legal character, entirely unlike the knowledge indigenous people acquire from settlers and industrialized societies"* (quoted by Dutfield 2000).

A significant part of TRM has been disclosed as a result of codification (that is, formalization in written form), wide use, or through collection and publication by anthropologists, historians, botanists, or other researchers and observers (Koning 1998). The longer TRM knowledge has been around, the more likely it is to have been disclosed through use and publication. The codified TRM tradition consists of medical knowledge with sophisticated theoretical foundations (Shankar et al. 1999). The Ayurvedic system of medicine is a particularly good example, as it is codified in 54 authoritative books. Codified TRM has been made publicly available, and hence, under current IPRs rules, could not be appropriated, either by its traditional holders or third parties.

As indicated previously, non-codified systems include what have been termed "folk," "rural," "tribal," and "indigenous" TRM, which has been handed over orally from generation to generation. Such systems of medicine are generally based on traditional beliefs, norms and practices based on centuries old experiences of trials and errors, successes and failures at the household and community level. These are passed through oral tradition and may be called "people's health culture" (Balasubramanian 1997).

However, there are cases in which TRM is and has always been kept secret. In specialized areas, such as knowledge dealt with by bone-setters, midwives or traditional birth attendants and herbalists, including knowledge of healing techniques and properties of plants and animal substances, access is restricted to certain classes of people (Koon 1999). In Kenya, for instance, a study on herbal medicine showed that most of the herbalists interviewed maintained the secrecy of their knowledge: *"In Kenya, among the members of the Kikuyu community, indigenous knowledge in some fields was a well guarded secret. For instance, a person who had acquired special skills as a blacksmith would not allow just anybody to walk into his workshop and watch him make such instruments as spears, pangas, diggings hoes, etc. The skills of making such instruments were carefully guarded. Such a person would only train his son or a very close relative. The same case applied to herbalists. An intruder was always heavily fined in order to deter any attempt to steal such knowledge. The problem with this type of system is that such important knowledge was owned by and confined to a few family members and rapid development on innovations was hampered by secrecy"* (Muchae 2000).

While prior disclosure of TRM will in many cases prevent the acquisition of IPRs, notably patents, not all TRM may be deemed as disclosed and lacking novelty for the purpose of IPRs protection.

3.1.3.3 The Importance and the Role of Traditional Medicine

It is estimated that the majority of people worldwide rely mainly on traditional, largely herbal, medicine to meet their primary healthcare needs (Pei Shengji 2001).

According to the WHO,[6] 80% of the world's population is dependent on healthcare provided by medicinal plants. Although the use of medicinal plants is widely spread overall, it is the financially poorest who are most dependent on medicinal plants – culturally, and for their medicines and income. In developing countries, only 15% of pharmaceutical drugs is consumed (Toledo 1995), and a large proportion of even this small percentage is taken by relatively more affluent people. Both rural and urban dwellers, in developing countries, rely on medicinal plants, many rural people still depending largely on plants collected from close to their homes, while urban dwellers depend, for the most part, on dried plants transported in from rural areas (Marshall 1998).

The global demand for herbal medicine is not only large, but growing (Srivastava 2000). The market for Ayurvedic medicines is estimated to be expanding at 20% annually in India (Subrat 2002), while the quantity of medicinal plants obtained from just one province of China (Yunnan) has grown 10 times in the last 10 years (Pei Shengji 2001). An example of increased pressure on collecting grounds is provided by the Gori valley in the Indian Himalayas, where the annual period of MAP

[6] *Traditional Medicine Strategy 2002–2005*, World Health Organization, WHO/EDM/TRM/2002.1, Geneva, p.7.

harvesting has increased from 2 to 5 months (Uniyal et al. 2002). Factors contributing to the growth in demand for traditional medicine include the expanding human population and the frequently inadequate provision of allopathic medicine in developing countries.

The ever-presence of traditional medicine and of medical practitioners in remote areas of the world is well documented by anthropological studies (Airhihenbuwa and Harrison 1993). Traditional healers are the dominant providers of medical care in forest areas. Their importance was first formally suggested at the World Health Assembly in 1976, with subsequent stronger formal support for better recognition of their expertise (Akerele et al. 1991). According to numerous sources, with slightly varying estimates, traditional healers are said to provide between 70% and 95% of the primary health care in Africa.

In some countries, such as Zimbabwe and South Africa, the responsible authorities accord substantial recognition to healers through national efforts designed to integrate traditional and Western medical systems. In other regions, healers are afforded no substantive recognition, their status existing purely within the custom of local communities (Lettington 2000).

Leonard (2003) notes the preference, in many parts of Africa, for traditional healers over 'modern' ones, reflected in the higher fees paid to traditional practitioners in both Cameroon and Kenya. In many areas, the belief that healers can also poison or curse their patients creates a strong willingness to pay (Leonard 2003). In some tribal societies, such as the Tabwa of Zaire, the role of the traditional healer is so prominent that a link is made between healers and leaders (Nguyen and Peschard 2003).

Among the Kongo of Zaire, writes, *'…..the contrast between competent authority and the disastrous consequences of unbridled envy, anger and injustice is a recurring theme in the exploration of causality of illness. The chief partakes of the same power as the witch…'*

According to the World Health Organization, *"…more than a half billion people in Africa visit traditional healers for some or all of their medical care. It is the traditional healers and birth attendants in rural and urban areas that have historically provided and continue to provide primary healthcare. They are the vital link to supplying the needed services in their communities, and yet their efforts must continue to expand as populations grow, and health concerns continue to increase in complexity and case numbers"* (cited by Nelson-Harrison et al. 2002).

During the colonial era, traditional medical practitioners came under attack. The spread of allopathic medicine was aided in its supremacy by association with the political and economic power of the West. Allopathic medicine became part of the 'civilising colonial mission.' Ayurvedic medicine was suppressed in state-funded medical colleges in India after 1835, and local medical traditions, with their 'witchdoctors,' were denounced in Africa. Even in China, never under full colonial rule, allopathic medicine came to be seen as progressive. The Kuomintang Government decided that traditional Chinese medicine was unscientific and passed a law in 1929 making its practice illegal (Griggs 1981).

The increasing nationalisation of medicine during the 19th and especially the 20th centuries, and the rise in the power of pharmaceutical companies, has given greater impetus to allopathic medicine.

Until recently, and then only in some countries, national healthcare systems have devoted all, or nearly all, their resources to the promotion and delivery of allopathic medicine, ignoring other therapeutic traditions. This is now changing, especially in some countries such as China and India, even though some medical traditions, such as Tibetan medicine in India and Nepal, have yet to gain official recognition (unlike Ayurvedic medicine which is officially recognised in both countries).

It is important to underline that lack of official recognition and associated support has implications for conservation, because such recognition can raise the status of practitioners at the village level. Since such practitioners are generally the most knowledgeable about plants in their communities, and have an intrinsic interest in their conservation; an increase in their authority has the potential to greatly assist in the improvement and/or management of plant resources.

Besides serving medical and cultural functions, medicinal plants in developing countries have an important economic role. The gathering of wild medicinal herbs frequently provides economically marginalised groups, such as smallholders and landless herdspeople, with their only form of cash income. Medicinal plants are easily integrated into traditional crops, such as maize, beans, and vegetables. Thanks to differences in harvest times, farmers are better able to distribute their incomes over the whole year. Small-scale traders and industries also benefit from being able to buy up dried medicinal plants and process them into teas, ointments, and tinctures for the local market.

Between 50% and 100% of households in the northern part of central Nepal and about 25–50% in the middle part of the same region are involved in collecting medicinal plants for sale, the materials being traded in wholesale markets in Delhi. The money received represents 15–30% of the total income of poorer households (Olsen 2005).

Medicinal plants are as well an integral component of ethnoveterinary medicine. Farmers and herders in several countries use medicinal plants in the maintenance and conservation of the healthcare of livestock. It is estimated that medicinal plants, for several centuries, have been widely used as a primary source of prevention and control of livestock diseases. In fact, interest of such use in the veterinary sector has resulted primarily from the increasing cost of livestock maintenance and the introduction of new technology in the production of veterinary medicines and vaccines.

3.2 Access and Use of Biodiversity and Traditional Knowledge by Bioprospectors and Its Impact on Local Communities

3.2.1 Bioprospecting: Its Evolution and Its Dimension

Biodiversity prospecting is the exploration of biodiversity for commercially valuable genetic and biochemical resources, with particular reference to the pharmaceutical, biotechnological, and agricultural industries (Reid et al. 1993).

Prospective biological resources for bioprospecting are comprised of two categories: organic resources and informational resources. The availability of organic resources depends on maintaining biodiversity of the biosphere in three important respects: genetic diversity within a species, species diversity within an ecosystem, and ecosystem diversity within a habitat. Bioprospecting is only partly concerned with harvesting tangible organic material for genetic manipulation, or for extracting and exploiting the information provided by the organic material. A second source of informational resources are compilations of information in the form of publications, databases, gene banks on the basis of which bioprospectors can learn about phenotypes (observable characteristics of life forms), and genotypes (genetic composition of life forms) and use or maintenance of organic resources. A third source is ethnobiological knowledge, an important conveyor of experience based on direct experience of natural systems.

There is a need to distinguish bioprospecting *per se* from the development or actual manufacture of a commercial product. With pharmaceuticals as an example, certain large global pharmaceutical firms operate their own bioprospecting units. In other words, they are vertically integrated and can take a product from start to finish completely in-house. Specifically, they can develop a commercial drug from idea conception to bioprospecting for likely genetic material, synthesis of active compounds, clinical trials, manufacturing, marketing, and distribution. On the other hand, stand-alone bioprospecting firms typically work mostly on the front end. They normally identify likely samples, organise sample collection, and isolate and process active compounds from samples into a form usable by the pharmaceutical client. In this case, the bioprospecting firm merely delivers processed molecules to its client. The pharmaceutical firm then decides, with no guarantee of success, whether to proceed to develop a new drug with the processed compounds.

Bioprospecting, as the exploration of biodiversity, is not a recent phenomenon. Harding (cited by Foucault 1980) explains that, since 1492, Europeans needed to attain knowledge concerning biodiversity, not only to reach other parts of the world but to survive there. Brockway gives examples of the high mortality rates suffered by British colonists, especially in India and Africa. If not for the development of a cheap and reliable source of quinine, an anti-malarial drug developed from cinchona, the Andean fever-bark tree, colonial expansion into many parts of the world by European powers would not have been possible. Brockway makes a strong argument that plants were sourced from around the world at the request of Royal Botanical Gardens at Kew in the United Kingdom to meet the economic goals of the Empire. Brockway examined the networks of relations between the collectors of botanical material, colonial governments and commercial interests, indentifying these networks as the mechanism for Western botanical expansion.

Throughout the nineteenth century, European governments, particularly the British, dispatched many plant collect missions. An essential element of this colonial process of appropriation was thus the establishment of botanical gardens to store accumulated samples of flora. The material held in botanical gardens, and the archival and database information concerning the use of these biological resources, have become salient principal elements of research, providing leads for scientists in many bioprospecting projects (André 2002).

These historical experiences of bioprospecting are of significance to contemporary practices. The difference now is that the same knowledge and resources have the potential to reap a new form of economical reward, as technological advances have enabled novel uses of biological resources for the commercial use of biodiversity on a wide scale. Recent advances in biotechnology have increased the ability of scientists to investigate organisms at the genetic level and to find ways to commercialise products developed from such investigations.

From the end of World War Two through to the early 1970s, extracts of active substances from plants were central to the development of pharmaceuticals. In the 1980s, the importance of natural products to the pharmaceutical industry declined (Conklin 1997). It was instead widely believed within the industry that drugs could be chemically synthesised in the laboratory faster and at less expense. Ethnobotanical approaches to drug research became thought of as antiquated, in comparison to computer-assisted "designer pharmaceuticals" (Semali and Kincheloe 1999). In the current climate of rapidly expanding technology, particularly in biotechnology, the industry has come "full circle," with the development of drugs from natural products being again considered commercially attractive.

Aided by technological innovations, particularly biotechnology and microelectronics, a return to natural product research has become economically viable, particularly when the research field can be narrowed down to using the traditional medicinal knowledge of tribal communities. Extracts from dried biological samples, which have potential in drug development, can be extracted for active compounds using high-throughput screening techniques. Since the 1980s, robotics have freed researchers from the manual tasks of running assays, while miniaturisation has dramatically reduced the amount of substances used. This has enabled high-throughput screening of up to 100.000 compounds a day. Also, Bioinformatics (the management and analysis of biological information) is a substantial technological innovation, central to advances in both modern pharmaceutical and research biotechnology (Biotechnology and Development Monitor 1999).

Expectation of profits from new products has stimulated biodiversity prospecting in recent years. Focusing on the tropical forests, estimate that there were roughly 375 medicinal plant taxa with commercial value yet to be revealed. Each undiscovered drug plant could be worth in the area of US$96 million to a pharmaceutical interest, with gross revenue for all drug plant discoveries yielding a total of US$3.2–4.7 billion. According to the potential economic value of plant-derived drugs is between US$200 billion and US$1.8 trillion per year. However, speculative as these figures may be (Artuso 1997), the impression has at least entered mainstream environmental thought that tropical drug plants represent a hugely lucrative direction for pharmaceutical investigation.

The recent resurgence of scientific interest in traditional pharmacopoeias is a phenomenon that has a dimension that goes beyond pure science and economics. It can be indeed analysed as a sociological phenomenon, which characterises current society.

Connie Grauds (1997) notes, *"Besides being rich with an overpowering verdant fecundity and colorful wildlife, the rain forest holds secrets that could change the course of medicine as we know it."*

This interest in traditional medicine and in the healing properties of the plants goes beyond a pure therapeutical interest. It assumes a more complexe dimension, almost magic, which could have its roots in a nostalgia towards a symbiotic and fusional relationship with Nature, longing for a pristine pureness of the origin. "*We seem desperately to 'need' to believe that the cures for what ails us, medical and otherwise, are somehow concealed in the occult workings of nature. This ancient theme, portraying a synergistic harmony between man and nature, resonates with regard to the medicinal power of plants, which are envisioned as material channels through which the spiritual forces of nature can be brought to bear. Fed by science and nurtured by longdormant concepts, the rainforest medicinal issue has grown for many into an article of pure faith.*"

This interest of the public in traditional medicine and in healing properties of the plants is influenced by the mass-media, with a hint of irony: "*Fortified by a steady diet of television documentaries, nongovernmental organization (NGO) projects (e.g., the Periwinkle Project), popular books, scientific articles, and Hollywood productions such as, "The Medicine Man," the notion that miracle cures for society's most debilitating diseases are harboured in the fading memories of a few elderly forest shamans, the perceived stewards of tropical nature's medicinal providence, has become firmly entrenched in Western everyday wisdom.*"

3.2.2 Importance of Traditional Medicine and Traditional Knowledge for Bioprospecting

There has been a recent growth of interest in traditional medicine from the international pharmaceutical industry, as well as from the national product industry in Europe and America.

Cultivation of medicinal plants is one increasingly important component of the traditional medicine value added chain. Although cultivation from the wild continues to provide the majority of plant material consumed by the herbal medicine industry, in Asia, the trend is towards agriculturally cultivated materials that often better guarantee supplies, consistency, species identification, and high levels of post-harvest handling (Chandra 2002)[7]. In contrast, in Africa, whose population relies greatly on TRM, virtually no investment in such cultivation of medicinal plants has been made.

[7]In India, it has been noted, however, that less than 30 of the medicinal plants utilized by the industry are under commercial cultivation. 80,000 metric tons a year of certain plant varieties are being collected from the wild. At this rate of collection, the TRM industry may crash because of lack of suppliers in the short term.

World trade in medicinal plants accounts for about 30% of the total drug market.[8] This percentage excludes plants used as raw material sources for the essential oils required to manufacture cosmetics, food additives, and for other non-medicinal purposes. In 1976, imports of medicinal plants worldwide were estimated to be $US 355 million. This rose to $US 551 million by 1980 – an increase of over 60% within 4 years.

The pharmaceutical industry research focuses on the isolation and direct use of active medicinal constituents, or on the development of semisynthetic drugs, or still again on the active screening of natural products to yield synthetic pharmacologically-active compounds. In Germany, for example, over 1,500 plant species encountered in some 200 families and 800 genera have been processed into medicinal products (Cunningham 1993).Of 76 compounds obtained from higher plants that are present in US prescriptions, only 7% are commercially produced by total synthesis.[9]

According to Farnsworth (1988), one fourth of pharmaceutical products are based on, or derived from, plants. Traditional medicine is being viewed by the pharmaceutical industry as a source of "qualified leads" in the identification of bioactive agents in the production of modern drugs. Nijar (1996) points out that three quarters of the plants that provide active ingredients for prescription drugs came to the attention of researchers because of their use in traditional medicine. He states also that, of the 120 active compounds currently isolated from the higher plants and widely used in medicine today, 74% show a positive correlation between their modern therapeutic use and the traditional use of the plant from which they were derived. Traditional knowledge is said to have increased the efficiency of screening plants for medicinal properties by more than 400%.[10]

[8] Drugs derived from plants are of immense importance in terms of numbers of patients treated. It is reported that ca. 25% of all prescriptions dispensed from community pharmacies in the USA between 1959 and 1973 contained one or more ingredients derived from higher plants. A study of the top 150 proprietary drugs used in the USA in 1993, found that 57% of all prescriptions contained at least one major active compound currently or once derived from (or patterned after) compounds derived from biological diversity.

[9] Biochemist Norman Farnsworth's (1988) estimated that of the 119 plant-based compounds used in medicine worldwide, 74% had the same or related uses as the medicinal plants from which they were derived (Dutfield 2000).

[10] Despite claims by Farnsworth and Soejardo (120) that approximately 74% of all modern drugs discovered are the result of leads provided by indigenous medicinal knowledge, other commentators, dispute the value of ethnobotanical and ethnomedical information to pharmaceutical research. Indeed, Borris and Turner maintain that the value of indigenous knowledge to natural product research in the pharmaceutical industry is minimal. According to these authors, it is a complement to "the basic pharmaco/cell biology/biochemistry based discovery program," pursued only for diversity in pharmaceutical research. Both Borris and Turner assert that in the current research climate where all samples are tested in all available screens, indigenous knowledge is irrelevant. Davidson et al. agree with the argument, claiming that such knowledge is only beneficial if researching a narrow range of target diseases.

For pharmaceuticals, concentrating bioprospecting efforts on the traditional use of plants focuses leads for screening and can result in a more efficient and less expensive drug discovery process (Elisabetsky and Castilhos 1990). Likewise, leads from the traditional process of plant preparation for healing provide clues to the type of chemical compounds in plants under investigation (Schultes and Raffauf 1990).

Of the 120 active compounds isolated from higher plants and used today in Western medicine, 74% have the same therapeutic use as in native societies (Farnsworth et al. 1985). Rather than randomly collecting and screening plants, it can be a more efficient strategy for some companies to use indigenous knowledge as a lead to pinpointing promising plants for new medicines (King et al. 1997). Organisms can be chosen for bioassays through leads that are unique to the area and culture from which they are located (McChesney 1996).

Financially, the retail sales of pharmaceutical products were estimated at US$80–90 billion globally in 1997, with medicinal plants contributing very significantly (Sheldon et al. 1997). Attempts have been made to estimate the contribution of biodiversity related traditional medicine to modern industry, particularly pharmaceuticals. Nevertheless, estimating the full value of traditional knowledge in monetary terms is difficult if not impossible,[11] and significant controversy exists about the value of traditional medicine as a source of new products for pharmaceutical companies. It has been pointed out that, in some cases, pharmaceutical companies have obtained considerable benefits from the exploitation of traditional medicine.[12]

A study of the 25 best-selling pharmaceutical drugs in 1997 found that 11 of them (42%) were either biologicals, natural products, or entities derived from natural products, with a total value of US$17.5 billion (Laird and Ten Kate 1999). The total sales' value of drugs (such as Taxol) derived from just one plant species (*Taxus baccata*) was US$2.3 billion in 2000 (Laird and Ten Kate 1999). The world market for herbal remedies in 1999 was calculated to be worth US$19.4 billion, with Europe in the lead (US$6.7 billion), followed by Asia (US$5.1 billion), North America (US$4.0 billion), Japan (US$2.2 billion), and then the rest of the world (US$1.4 billion) (Laird 2002).

Some have observed, however, a declining interest by pharmaceutical companies in bio prospecting for new drugs,[13] especially in view of the opportunities opened by genomics, combinatorial chemistry and proteomics.[14] Others suspect that pharmaceuticals companies may wish to downplay their involvement in "biopiracy" and to

[11] See, e.g. Dutfield 2000, p. 10.

[12] An often cited case is the use of the Madagascan rosy periwinkle plant by Eli Lilly for the treatment of Hodgkin's disease (a type of lymph cancer) and childhood leukemia.

[13] According to, some imagine *"that traditional medicinal knowledge of indigenous peoples is an object of great interest to drug companies and hence deserving of a high value (given its scarcity). Analysis of the case at hand and continuing trends away from research involving traditional plant remedies in the pharmaceutical industry cast great doubt on the dollar value of traditional knowledge to pharmaceutical companies."*

[14] See, e.g., Barsh 2001.

deemphasise the risk of appropriation, so that policy makers will create more advantageous policy measures for access and benefit sharing.

The combined forces of destructive forest exploitation, species extirpation, and eroding plant knowledge among rural elders undermine their anticipated contribution to Western medicine.

Deforestation is linked to lower access to traditional plant medicines in Samoa, Kenya, and eastern Brazil (Voeks 1996; Jungerius 1998; Cox 2000). In other locations, such as Sierra Leone, Cameroon, Madagascar, and India, valuable medicinal taxa are declining precipitously due to excessive plant extraction to supply national and international markets (Anyinam 1995; Lebbie and Guries 1995; Pandey and Bisaria 1998; Stewart 2003). In South Africa, an estimated 20,000 t of plant material from some 700 medicinal species is harvested annually from the wild (Mander 1998). Under these conditions, commercial and biological extinction looms for a growing list of healing plants (Leaman and Schippmann 1998).

The most pressing threat to medicinal plants and their knowledge profiles, however, appears to be declining medicinal knowledge among rural tropical communities (Cox 2000). Religious conversion (Caniago and Siebert 1998; Voeks and Sercombe 2000; Steinberg 2002), entrance of Western medicine (Milliken 1997; Ugent 2000), economic improvement (Benz et al. 2000), and enhanced access to formal education have all been linked to declining ethnobotanical knowledge. As reported by Phillips and Gentry (1993), medicinal plant knowledge "is uniquely vulnerable to acculturation."

Regarding the impact of pharmaceutical bioprospecting on biodiversity, there is a general belief that it invariably requires high-volume harvesting of whole organisms for final consumption, thus decimating biodiversity. This is not entirely accurate. Bioprospecting that aims to develop a regulated pharmaceutical drug ordinarily does not require wholesale harvesting of plants or animals. Thus, while *pharmaceutical* bioprospecting does not ordinarily endanger biodiversity, current practices in the *phytomedicine* industry pose a danger. Pharmaceutical firms ordinarily strive to synthesise compounds from a limited amount of natural products. On the other hand, producers of herbal medicines usually do not attempt to do so because of the high costs involved for relatively low-return. In contrast, pharmaceutical bioprospecting involves a high return and requires only low-volume harvesting. The point is that, although one can bioprospect for both pharmaceutical drugs and phytomedicines, the two are not necessarily the same.

3.2.3 The Impact of the Current System of Access and Use of Biodiversity and Traditional Knowledge on the Local Communities

Access to the plant genetic resources of a country is governed by an evolving mosaic of national laws, international conventions, multilateral agreements concerning biodiversity, and intellectual property rights. Added to these are the plurilateral

codes of practice developed in *sui generis* modalities, identified in the work of international institutions.

Intellectual Property Rights (IPRs) are private property rights that enable the holder to exert a right for a defined period of time, to the exclusion of others, over the commercial use or exploitation of intangible intellectual information, which is used to produce a certain product or embodied within a particular technology.[15] They exist in various forms, such as patents, trade secrets, and copyrights, and their legal status or the legal rights associated with IPRs are governed, not by international law, but by national legislation and case law, and consequently vary from state to state.

Globalisation has emphasised the linkages and conflicts between international trade rulers, domestic priorities, standards of IPR protection, and resource needs, which are producing in a fast expanding gap between industrialised and developing countries, as well as growing differences and inequalities within those countries.

A central issue is to analyse the impact of the international acceptance and expansion of common standards of IPRs, which were developed to meet the access to and use of biodiversity by the bioprospectors, on the local communities.

The question which we ask is: what is the socio-economic impact of the current regulation system of access to and use of biodiversity on local communities?

The current system of access to and use of biodiversity and traditional knowledge:

- Do they favour a fair access to and use of natural resources and biodiversity to local communities and their development?
- Do they favour the preservation and the respect of indigenous knowledge, innovations and practices?
- What are the main risks of the misuse and misappropriation of traditional knowledge?

3.2.3.1 Bioprospecting and Development Issues

Concerns have been raised by development countries and civil society about the impact of IPRs on development issues. The UN-Sub Commission for the Protection and the Promotion of Human Rights unanimously adopted a resolution on "Intellectual Property Rights and Human Rights" in August 2000, stating that the current IPRs system could infringe the rights of the world's poorest population to access seeds and pharmaceuticals (UN Resolution E/CN.4/Sub.2/2000/L.20).

[15] Glowka defines IPRs as private legal rights that apply to intangible human contribution that goes into producing a particular technology. The holder has a legal monopoly over the commercial exploitation of the intellectual property over a specified period of time, and therefore, the technology that embodies it. See Lyle Glowka, *A Guide to Designing Legal Frameworks to Determine Access to Genetic Resources* (Gland, Switzerland, Cambridge and Bonn).

The resolution recognises that there is a conflict between the private interests of IPR holders and the social and public concerns embodied in international human rights law, and has requested governments to *"integrate into their national and local legislations and policies, provisions in accordance with international human rights obligations and principles that protect the social function of intellectual property."*

The scope of the exclusive rights created by IPRs defines who can use the information contained in genetic resources, and so influences the distribution of the benefits flowing from this use. In this way, IPRs will affect who shares in the benefits arising from genetic resources, and the type of technology developed from genetic resources, with implications for the conservation and use of biological diversity.[16]

Concerning the agricultural biotechnology industries, the rights given by patents to plant breeders over plant varieties require these to be genetically uniform, which favours the commercial production of seeds on a global scale rather then locally adapted varieties. The cultivation of uniform varieties is both linked to the loss of agro-biodiversity and to the increase of genetic erosion, making crops more vulnerable to disease.

The impact of IPR laws in developing countries are potentially very negative for small farmers, with 1.4 billion people depending on saved seeds, while patents take away this traditional practice of farmers. Although the relative importance of rural poverty varies from country to country, more than 70% of the total poverty in developing countries is found in rural areas, where farming is the main basis of local livelihoods.

Patents can also make seeds more expensive for small farmers due to royalty payments, restrictive contracts, and increased commercialisation, which compromise the rights of the farmers to save, grow, exchange, and sell seeds. Genetic diversity in agriculture enables poor farmers to select varieties of plants and animals that are best adapted to changing environmental, economic, and social pressures (Madaley 2001).

Market-based IPR incentives often promote the development of technology that is focused less towards the needs of poorer communities, including health, food security, and environmentally sound technology, and more towards the interests of private industry. An example of how market incentives may promote the development of potentially inappropriate technologies is what is referred to by industry as, "genetic use restriction technologies." This technology has been used to develop plants that produce sterile seeds (known by its critics as "terminator technology"), or that require a chemical "switch" to be applied before they will exhibit certain characteristics, such as flowering.

IPR-related control over technology, derived from genetic resources, is particularly intense in the pharmaceutical and agricultural biotechnology industries.

[16]Some of the main effects of IPRs on biodiversity have been identified in decreased crop diversity, decreased spatial genetic diversity, and increased use of external inputs. (UNCTAD-ICTSD Intellectual Property Rights: Implication for development, Policy Discussion Paper, August 2003).

The top ten corporations in the pharmaceutical, seed, and agrochemical markets in 1999 accounted for approximately 82% of the respective global markets. This industry concentration, and the associated consolidation of IPRs, raise serious challenges in both developed and developing countries. It may allow those who gain ownership over genetic resources to raise prices, impose restrictive licensing conditions, restrict ongoing research, and undermine the competition.

This tendency may be exacerbated by the practice in some countries of granting overly broad biotechnology patents. Patents of extremely broad scope, in some cases covering entire crop species, have been granted to private interests.

Concerning the pharmaceutical sector, some state that bioprospecting can allow the communities to benefit from scientific research into medicinal plants in various ways, e.g. through acquiring improved methods of managing these resources, helping to bolster self-belief in local culture, improved healthcare, and sustainable economic development. They say that, at national level, countries can benefit from such research through their strengthened abilities to conserve biodiversity, the development of integrated health-care systems, and reduced dependency on imported pharmaceuticals.

Nevertheless, as Intellectual Property Rights are private rights, they grant their holder the ability to exclude others from certain activities, such as using a product or process, for a defined period of time. The control afforded by IP protection thus enables rights holders to limit the use of the resource. In the area of medicinal plants, the WHO has identified the need to establish policies regarding the protection of indigenous knowledge, given the risk raised by the impact that further commercialisation and unregulated use of traditional plants and medicines may have for those who rely on these materials as their primary or even only source of health care.

Thus, attempts to realise the commercial value of traditional medicine through IPRs may conflict with the achievement of some public health objectives, particularly that of increasing access to medicines by the poor.

3.2.3.2 The Misuse and Misappropriation of Traditional Knowledge: The Phenomenon of Biopiracy and Biotrade

The absence of an internationally agreed methodology for sharing economic benefits from the commercial exploitation of biodiversity with the primary conservers and holders of traditional knowledge and information is leading to a growing number of accusations of biopiracy committed by enterprises in developing countries.

"Bio-piracy" has been defined as *"the process through which the rights of indigenous cultures to genetic resources and knowledge are erased and replaced for those who have exploited indigenous knowledge and biodiversity"* (Shiva et al. 1997).

The term can also be used to suggest a breach of a contractual agreement on the access and use of traditional knowledge to the detriment of the provider and bioprospecting without the consent of the local communities. The term "biopiracy" was coined by, as part of a counter attack strategy on behalf of developing countries that have been accused by developed countries of supporting "intellectual piracy."

These countries felt they were hardly as piratical as corporations that acquire resources and traditional knowledge from their countries, use them in their research and development programs, and acquire patents and other IPRs without compensating the provider countries and communities.

In recent years, the number of cases of biopiracy affecting developing countries has been growing steadily. A report commissioned by Christian Aid estimates that biopiracy is depriving developing countries of $4.5 billion per annum. A report of the United Nations Development Programme (UNDP) suggests a figure of $5.4 billion.[17]

Meetali (1999) stresses how different the views and perceptions are among governments on the way consider what is meant by biopiracy. Some countries feel quite nationalistic about this issue and consider biopiracy as a manifestation of neocolonialism. For them, TK is national knowledge, rather than belonging to minority groups. In countries like India, the predominant view is that the nation itself is the 'victim' of biopiracy. Among developing nations, perhaps India has taken the most aggressive stance against what it considers the neocolonial appropriation of its natural heritage.

In Africa, the perception seems to be that the continent as a whole is prey to biopirates. For "New World" countries established by European settlers, TK belongs to separate communities and falls outside the dominant culture. For them, dealing with this issue is a matter of doing the right thing by their indigenous groups, who have been subjected to oppression in the past and continue to be marginalised. In Latin America, Australia, and New Zealand, the victims are generally seen as indigenous people who usually, though not always, represent minority populations.

The question of biodiversity appropriation and how to accommodate traditional knowledge within conventional systems of intellectual property has become emblematic of larger and contentious questions of economic relations between developing and developed countries, and between the control and structure of global and regional marketplaces.

The phenomenon of "biopiracy" has been seen, as well, as a form of "bioimperialism," and has been invoked in order to define the way in which industrialized countries "conquer" illegitimately the biological resources of developing countries.

The supporters of developing countries have derided the practices of developed countries as biopiracy, an insidious channel for further economic exploitation, or even the *de facto* reimposition of colonial domination. Such a vision echoes the passions of the larger opposition against globalization, particularly the debate over potential conflicts between liberalised trade and environmental protection. Chen (2002) states: *"The developing countries of the global south purportedly exalt gift-giving and other communitarian norms over the market-based ethos of the capitalistic north. Such communal norms are presumably strongest among people who are*

[17] *Conserving Indigenous Knowledge: Integrating two systems of innovation*'. An independent study by the Rural Advancement Foundation International. Commissioned by the United Nations Development Programme.

regarded as indigenous on account of their descent from the populations which inhabited [their] country at the time of conquest or colonization... and who... retain some or all of their own social, economic, cultural and political institutions..By contrast, developed countries allegedly have a eurocentred, individualistic understanding of property that ignores the collective labor of generations..."

According to Amin (1998), the contemporary form of capitalism, with the globalization of neo-liberal economic policies, has played a large role in the use of indigenous knowledge, not so much because of the relationship of the indigenous people to the modes of production of their knowledge, but 'from their economic alienation' in a system that has come to incorporate their knowledge in order to disenfranchise them. Specifically, the neo-liberal economic policies of today's global capitalism are seen as a huge threat to the very existence of indigenous people.

The situation of misappropriation of genetic resources from pharmaceutical entreprises is often made worse by some government policies, which consist in restricting the access to local communities in state-owned lands.[18] Sometimes, collusion is stipulated between governments and pharmaceutical enterprises, without taking into account an equitable share of benefits with the local communities. In Malaysia, a plant in the Sarawak rainforest is currently undergoing tests to determine if it presents a cure for prostate cancer. The Malaysian government has not released the plant's name for security reasons, but they are working with an Australian company to bring it on to the market. No compensation has been offered to local communities that used the plant from time immemorial.

Governments and companies alike are key players in the business of biotrade. "Biotrade" refers to the movement of biological resources between countries, companies, academic institutions, and individuals for actual or potential profit. An increasing number of governments in biodiversity rich countries, willingly or unwillingly, are allowing overseas and domestic private enterprise to operate in the sector. These governments often have little economic power when negotiating with large multinational companies. Often one company may strengthen its position in a geographic region by signing contracts with several countries at the same time.[19]

[18]For example, the Kani Tribe in India has trouble accessing the forest plant *Trichopus zeylanicus* from forest lands, which is used in the preparation of the herbal medicine "Jeevani." The tribal people cannot legally access the plant and sell it to the institute that developed the drug, since collection for commercial purposes is not allowed. The Forest Department justifies these restrictions on the grounds of conserving anendemic species, which it argues may run the risk of overexploitation as a result of commercial demand.

[19]One example is given by Oxford Natural Products (ONP) from the United Kingdom, who have signed an agreement with PT Indofarma, one of the largest pharmaceutical companies in Indonesia, which will bring 'Jamu' medicines onto the international market. 'Jamu' are the traditional local botanical medicines widely prescribed for those who live in Indonesia, the largest country in South East Asia. This thriving business of traditional medicine is one of the few that does well even in Indonesia's recession-ridden economy. ONP has also signed an agreement with one of the leading natural medicine development institutes in Vietnam. The two-part agreement embraces both development and future commercial rights giving the company exclusive access to an important portfolio of Vietnam's plant medicines. ONP is also involved in Bhutan, in which the company used the knowledge of the Dungtshos (Bhutanese traditional medicine doctors) and their assistants, the Menpas, to identify and document several medicinal plants prescribed as local remedies.

The tightening (reinforcement) of regulation in one country can also have an adverse impact on plant genetic resources in another. For example, the smuggling of *Taxus baccata* from Nepal has increased since Indian law, in its collection, has become stricter. The lack of a coordinated regional front against "biopirates" may be either because of political differences that may not allow for a constructive dialogue, or simply because of a sense of competition against one another, whilst competing for profitable bilateral bio-deals in the global marketplace.

The physical removal of plant genetic resources is another phenomenon that has surfaced in areas of eco-tourism and nature trails. Along with the ecotourism boom, the illicit collection, smuggling, and trade in marketable biological resources has become an increasing business. Nations such as the Maldives and the Pacific Island States,[20] where tourism is one of the largest economic activities, can be particularly vulnerable to such theft. Protected areas are also vulnerable areas, as growing tourism makes supervision more difficult.[21] In some cases, the smuggling of plants and traditional knowledge can happen with the collusion of local communities.

Research Institutions and Biopiracy

Research in traditional knowledge also raises questions about the relationship between academic institutions and the pharmaceutical industry. The number of research centres and research projects has increased in countries, which present high biodiversity and ranges from domestic ventures to foreign collaborations and corporate sponsorship.

In China, two foreign firms recently joined with one of mainland China's oldest houses of medicine to research and develop Chinese pharmaceuticals for overseas markets. *Pharmagenesis* from the US and *Orchid* from France signed a contract with *Lerentang* from Tienjin to invest US$9 million for joint research into the active ingredients in traditional Chinese medicines.

Research projects can also encourage biopiracy, when they seek to further corporate interests.

An analysis of bioprospecting, undertaken since 1992 in developing countries by the International Cooperative Biodiversity Groups (ICBG) and funded by the U.S. National Institutes of Health (National Cancer Institute), showed that four out of eight ICBG projects collected ethnomedical data, and three used ethnomedical data to select plants for testing. Three big pharmaceutical corporations and an emerging biotechnology company participated in ICBG projects, along with six U.S. universities. Only one U.S. patent resulted from the ICBG program, despite that 200,000 field specimens had been screened (Barsh 2001).

[20] In the Andaman Islands, off India's eastern coast, the Onge tribe supposedly had a cure for malaria.66 There was huge controversy when it was discovered that senior officials from a government-run research centre had planned to file a patent application in their own name for the malaria cure.

[21] The Philippine yew tree (*Taxus matrana*), reported to have great potential in treating cancer, was uprooted from a national park in Mount Pulag, Benguet. Subsequently, researchers from the University of Massachusetts patented it.

Nepal has its share of problems in bioprospecting, alongside research projects. A University professor from Illinois in the US collected the Dhobini plant (*Mussadena sp*.) from the Gurung community of Chhamdila, Nepal, without any arrangement for benefit sharing in case of commercialisation.

In one research project, a custody battle arose between Thailand and a UK Portsmouth University over *loca fungi* strains with potential medicinal uses. At issue was a collection of more than 200 strains of marine fungi, taken years ago from mangrove and coastal areas in southern Thailand, that were stored in laboratories in the UK University. A Portsmouth University professor took the marine fungi specimens in 1993, as part of a research project sponsored by a pharmaceutical company. They were finally returned much later after a complicated negotiation process (Noikorn 1998).

In response to this issue, some governments are tightening procedures and guidelines for research projects. For example, in India, biomedical research guidelines require that *"a folklore medicine / ethnomedicine is ready for commercialisation after it has been scientifically found to be effective, then the legitimate rights/share of the tribe or community from whom the knowledge was gathered should be taken care of appropriately while applying for the Intellectual Property Rights and Patents for the product."*[22] Likewise, the Indian Ministry of Environment and Forests, with the mandate to oversee biodiversity, issued a circular in 1998 to all universities and research institutes to stop the transfer of genetic material outside the country without prior informed consent and a proper material transfer agreement.

The increasing interest in Indigenous Knowledge is both nationally and internationally evidenced by the establishment of international agreements and protocols based on existing forms of cooperation in organisations.

The Convention on Biological Diversity (CBD) requires that every contracting party should respect, protect, and maintain knowledge, innovations, and practices of traditional and local communities. They should also promote the wider application of such knowledge, innovations, and practices with the approval and involvement of the holder, and encourage the equitable sharing of the benefits.

3.3 Bioprospecting, Protection of Traditional Knowledge and Benefit-Sharing

3.3.1 Traditional Knowledge Protection and Benefit-Sharing Issue: The Different Approaches

Concerning the issue of protection and benefit-sharing, the system of Intellectual Property Rights raises a number of ethical, managerial, and preservationist issues and concerns. Proponents of intellectual property rights seek to resolve three types

[22]Indian Council of Medical Research, 2000, *Ethical Guidelines for Biomedical Research on Human Subjects*, New Delhi, www.icmr.nic.in/ethical.pdf.

of dilemmas that become prominent as the value of indigenous knowledge grows: ethical, managerial, and preservationist.

For those who stress the ethical issue, it is only when compensation is legitimised and formalised through recognition of intellectual ownership to local communities that equity considerations can be taken into account. TK generates value that, due to the system of appropriation and reward currently in place, is not adequately recognised and compensated. The protection of TK would, therefore, be necessary to bring equity to essentially unjust and unequal relations.

Indigenous people must have recognised rights over the use and dissemination of their own indigenous knowledge in the commercial market place. If economic benefit is derived from the use of indigenous knowledge, the indigenous people should have the right to share in the commercial exploitation of the knowledge, and ideally should control the initial economic use of this knowledge.

According to Britz and Lipinski (2001), *social justice* can be used as a legislative tool to construct a framework for evaluating and re-aligning the assignment of ownership rights. These authors identify three categories of social justice, commutative, distributive, and retributive justice, which can be used to assess existing normative societal structures and provide a framework for new structures of intellectual property regimes.[23]

This dimension of social justice can assume a political connotation. The theories of power adopted by Bachrach and Baratz (1970), Lukes (1974), and scholars within the Marxist tradition, in some ways explain the exclusion of indigenous people from policy processes. Application of these ideas advanced by these theorists would see power exercised over indigenous peoples variously through hegemonic structures, manipulation of the policy agenda through the "mobilisation of bias," and exclusion from policy processes through the suppression of real interests.

Ecofeminist Vandana Shiva (1995) writes extensively and critically on reductionist science and the exclusion present in intellectual property rights regimes. Shiva also notes that the combination of dominant knowledge (biotechnology) and ownership (IPRs) regimes have created new subjective relations between technology and nature, and the transition from existing systems of ownership to "enclosure" within dominant regimes of ownerships. Shifting constructions of nature from the "common heritage of mankind" to private property have occurred in order to serve dominant, often multinational, corporate interests.

[23] This typology was first used by the National Conference of Catholic Bishops (National Conference of Catholic Bishops, Economic Justice for All 1986). Commutative justice, as the first category of justice, calls for fundamental fairness in all agreements and exchanges between individuals or social groups. The second category of social justice is distributive justice. In its broad sense, distributive justice is concerned with the fair allocation of the benefits of a particular society (for instance, income, wealth, power, and status) to its members. The final category of justice is also known as punishable justice. It refers to the fair and just punishment of the guilty. With regard to access to and use of information, this form of justice acts as an important guideline for the protection of indigenous knowledge. In the case of the intellectual property laws, punishment for the theft of that property is supported by this application of social justice. However, other 'takings' short of actual theft could also be subject to retribution.

This vision enables a critique of the institutions that have emerged to dispossess indigenous people of their resources and knowledge, through the "ways of knowing" and "ways of owning." This enables policy makers to marginalise indigenous people from the processes of policy making.

Policy decisions on technological change and resource access rights are made through processes which often have the social effect of marginalising wider public participation. The natural rights of indigenous people to property (physical and intellectual) are often denied. In the case of biotechnology and bioprospecting, indigenous people have appealed for recognition of their resources and knowledge rights, and also to greater participation in policy processes determining access, at the central state, to local state and international levels. They have made these appeals based on their recognition of wider communal and international commitment to social justice through the ideals of human rights, just treatment, and the elimination of inequalities and marginalisation.

The managerial issue relates to the question of creating ownership rights over indigenous knowledge resources that will ensure appropriate rewards to innovators, and thereby maximise future innovations. The estimation of a value by assuming a ceiling on the amount of available knowledge from within a given territorial area or pricing each unit of knowledge in such a situation, amounts to creating a new currency of such knowledge, which could be a store of value, as well as a medium of exchange (Coase 1960; Demsetz 1967).

The interaction of demand and supply that sets prices is not easily reproduced in a community of holders of traditional knowledge, unable to show an opportunity cost for the labour of communication between transmitters and recipients of information because an activity would not normally be regarded as production without the foregoing of some priced resource. Whether the better policy choice would be to load professional services onto goods in bundles of traditional resource rights in local communities or whether the notion of intellectual property should somehow be expanded to recognise professional services of traditional ethno-biological communal knowledge holders remains to be settled.

A deal struck between an indigenous group and a bioprospecting firm valued at the price of training the people of the group, providing technical support, a trust fund, a scholarship program, and a grant back or royalty-free licence may cover short term cost advantages gained by a bioprospector but still be insufficient to develop that country's own research and biotechnological industry.

Preservationist issues arise in terms of long term management and protection of existing indigenous knowledge resources. In this optic, the guarantee of ownership rights to indigenous people would also safeguard the future of indigenous knowledge, thus helping resolve preservation issues. This is because as beneficiaries and owners of knowledge, the indigenous people will strive to protect indigenous knowledge resources.

Here, the concern is based upon the belief that the increasing poverty of indigenous populations is leading them to undertake activities that erode biodiversity. It is important to recognise that there is the same diversity of views among indigenous people as there is in the wider community. Some indigenous people may wish to

preserve biodiversity related knowledge, as it relates to their collective heritage, while others may see potential economic benefits to be gained by allowing the use of their biodiversity related knowledge and practices by the wider community.

According to this philosophy, if they received material benefits in exchange for their stewardship of genetic materials, the decline would be halted. Intellectual property rights, therefore, in the managerial vision, can simultaneously satisfy the ethical and managerial dilemmas created in the extraction of indigenous medical resources because once indigenous populations possess formal ownership rights, they should be able to negotiate rules of access and use, fees, and royalties with other interested parties.

The issue of *protection of traditional knowledge and benefit-sharing* is a subject of much debate.

(a) Why protect the traditional knowledge ?

- To sell it as an ordinary good and to assure maximum private benefits?
- Because it is important for the conservation of biodiversity?
- To preserve the communities and their culture?

(b) What is to be protected? What is the nature of this good?

- The knowledge itself?
- The associated genetic resource?
- How to characterise the collective nature of the knowledge?
- Should be accepted intellectual property on this knowledge?

(c) What would be the regime of ownership of the genetic material associated to a traditional knowledge?

- Public good?
- Private good?
- Public good of special use?

(d) Who should be in charge of protecting traditional knowledge?

- The Government?
- The community?

(e) What is the role of the civil society and the Public lawyers?
(f) What should be the form of compensation?

- Monetary?
- Non-monetary?

(g) How to conciliate the payment with the collective nature of the knowledge?
(h) What types of benefits should be given?

- Royalties – percentage of the commercial profits?
- Advance monetary payments – payments on pre-fixed dates?
- Equipment, training and infrastructure?
- Priority for research on illnesses that occur in the region?

(i) Who should receive the benefits?

- Individuals and communities?
- Governmental institutions?
- Non-governmental organizations?

(j) What procedures should be followed?

- Informed consent and consensus building?
- Independent legal and commercial advice during the negotiation period?

3.3.2 The Protection of Traditional Knowledge and the Current IPRs System

Numerous authors have assessed the application of existing intellectual property systems to protect[24] indigenous cultural property and to assure benefit-sharing.

These systems include copyright, trademark, and trade secret[25].

Supporters of the existing IPR systems argue that IPRs provide incentives for continued investment by local and indigenous communities in the preservation of their biodiversity-related cultural heritage. They state that if existing IPRs are combined with benefit-sharing arrangements (included, for example, in contracts for access),

[24] According to Dutfield (2000), solutions to the protection of traditional knowledge in IPR law may be sought in terms of 'positive protection' and 'defensive protection.' *Positive protection* refers to the acquisition by the TK holders themselves of an IPR, such as a patent or an alternative right provided in a *sui generis* system. *Defensive protection* refers to provisions adopted in the law or by the regulatory authorities to prevent IPR claims to knowledge, a cultural expression, or a product being granted to unauthorised persons or organisations. It is important to mention here that positive protection measures may also serve to provide defensive protection and vice versa. The distinction between the two, then, is not always clear-cut. To many countries, non-governmental organisations, and others, defensive protection is necessary because the intellectual property system, and especially patents, is considered deficient in certain ways and allows companies to unfairly exploit TK. It may also be true that defensive protection may be more achievable than positive protection. This is because some of the most commonly-discussed defensive protection measures are basically enhancements to or modifications of existing IPRs.

[25] Farley believes copyright, and to a lesser extent, trademark and the related unfair competition laws (deceptive advertising), are best, while Greaves and Stephenson both consider a contract or license scheme to provide the best option. McGowan and Udeinya forward a more complex system of contract-based royalty rights for commercially viable indigenous knowledge. Instead of an expansion of patent rights, Hanellin forwards a *sui generis* approach (a specific statute) to offer *de novo* protection for plant-derived drugs (Hanellin 1991). King argues for a more general concept of compensation. Another option would be to maintain the traditional intellectual property systems, but rely on public sector intervention when exploitation of it occurs. Ruppert applies this to physical property, religious, sacred, or historical sites, but not to intangible property.

then local communities may benefit financially from the use of their knowledge and practices by others.

Nevertheless, there are concerns that the existing IPR systems, such as patents, may increase the risk of misappropriation of traditional knowledge. There is also concern that existing IPRs fail to provide positive incentives for local and indigenous communities to preserve and, if they wish, to capitalise on their traditional knowledge. It is clear that existing IPR systems, such as patents, are largely inappropriate to protect traditional knowledge; they are often expensive, difficult to access, and are unable to safeguard traditional knowledge that is often communally held and passed through the generations. Other forms of IPRs, such as geographical indications, copyright, and trademarks may be used by some communities, but their effectiveness and breadth of coverage is limited.

To the extent they do not achieve these goals, existing IPR systems may be changed to make them more easily available to indigenous and local communities to protect and commercialise their resources themselves. This view is not shared by many others, who believe that the appropriation of traditional knowledge is inherently problematic. Some indigenous organisations and others have noted that commercialisation is not always desired; they regard the use of IPRs as culturally inappropriate in some circumstances, and place emphasis on developing non-IPR based solutions as an approach that is more respectful of traditional knowledge.

The issue of 'protection' of traditional knowledge needs to be looked at from two perspectives: the "protection" may be granted to *exclude* the unauthorised use by third parties of the protected information. On the other hand, the "protection" is also a means to *preserve* traditional knowledge from uses that may erode it or negatively affect the life or culture of the communities that have developed and applied it. Furthermore, the protection also promotes self-respect and self-determination.

Britz and Lipinski (2001) stress the importance of recognising not only economic rights, but also ownership and moral rights to indigenous people:

- *Recognition of Ownership Rights*: Indigenous people have an ownership right in the indigenous knowledge associated with their culture. This right may extend beyond present intellectual property regimes.
- *Recognition of Moral Rights*: Indigenous knowledge should be used in a way that preserves the culture from which it was derived. The use of the knowledge should maintain the integrity of the indigenous knowledge, not disparage the indigenous culture from which it was derived, and allow for the proper identification or attribution of the indigenous people as a source of the knowledge.

In this context, Posey and Dutfield (1996) have put forward the concept of Traditional Resource Rights, which recognise *"the inextricable link between cultural and biological diversity and sees no contradiction between the human rights of indigenous and local communities, including the right to development and environmental conservation."*

3.3.3 Traditional Knowledge and Benefit-Sharing

Benefit sharing is a complex issue, which is agreed in principle by many, but there is very little idea even among its proponents regarding how it can be implemented and what can be termed as a fair and equitable sharing. Even in the international arena, experts are still grappling with the fairly new concept of benefit sharing.

In the Convention of Biological Diversity (CBD), the main international charter on conservation and the sustainable use of biological diversity propagates preservation of the traditional lifestyle and livelihood of traditional communities. It not only states that access to genetic resources and associated knowledge should be based on *mutually agreed terms* and *prior informed consent* of the holder of such knowledge and resources, but it also suggests *fair and equitable sharing of benefits derived from the use of biotic resources and its associated traditional knowledge.* However, CBD is silent on the implementation aspects of benefit sharing.

The CBD does not define 'fair and equitable' and the term can be interpreted in different ways. Some interpret the term to imply that the different parties to an agreement have agreed to mutually acceptable certain terms, others point out that different parties often have unequal negotiating powers (eg an indigenous community and a powerful multinational corporation).

Currently, the TRIPS Agreement makes no provision for the sharing of benefits with local and indigenous communities and to do so would require IPR laws to have stringent norms of disclosure on country and community from which patentable subject matter and information regarding its use were obtained as well as proof of consent of the provider country. Besides, the Committee on Trade and Environment (CTE) of the WTO has stated that the fact that the TRIPS Agreement does not address benefit sharing with local and indigenous communities would not preclude bilateral arrangements between states and companies to ensure such sharing, provided that these arrangements are compatible with it.

As Posey (1997) observes, even if traditional communities were able to secure IPR patent protection for their traditional knowledge and practices, their ability to uphold these rights in the face of challenges by powerful corporations would be extremely limited.

There are several thorny issues linked to the benefit-sharing of traditional knowledge:

What is notable about intellectual property rights as a solution is that it focuses primarily on material aspects of knowledge, and little on the cultural contexts in which knowledge is created and practised. Although intellectual property rights provide a mechanism for defining ownership and pattern of benefit distribution, there are some sociocultural features that make it incompatible with this protection system. These solutions tend to ignore other cultural values that may subsist with respect to the indigenous people.

One problem is represented by the fact that collective ownership and use of various forms of indigenous knowledge is a common feature that is often not compatible with most of existing intellectual property regimes that give rights to individuals and corporate players with legal identification. Anthropological literature reveals

that concepts such as 'ownership' and 'property,' or at least close equivalents to them, also exist in most, if not all, traditional societies.[26]

In fact, many traditional societies have their own custom-based 'intellectual property' systems, which are sometimes very complex. Every ecosystem is conceptualized as a web of social relationships between a specific group of people (family, clan, or tribe) and the other species with which they share a particular place.

Consistent with these general principles, indigenous people possess their own locally specific systems of jurisprudence with respect to the classification of knowledge, proper procedures for acquiring and sharing knowledge, and the nature of the rights and responsibilities that are attached to possessing knowledge. Some categories of knowledge may be attached to individual specialists, and other categories of knowledge to families, clans, the tribe, or nation as a whole. In most societies, knowledge is also divided by gender; for example, women are most often the bearers of botanical and medicinal knowledge.

Possession of knowledge by individuals, in effect, does not mean that such knowledge is perceived by communities as not belonging to them. Though at any one time, the knowledge may only be held by a handful of people with special roles in the community, in the course of the history of that community, it is essentially communally held knowledge. Those with the special knowledge do not "own" it as such, and many have obligations to share the knowledge within the community at different intervals. There may exist, for instance, community standards for when the information must be passed, such as during initiation rituals. These features indicate slight but important differences between the meaning of individual property in Western culture, and knowledge held by individuals within a non Western community context. For instance, a study on herbal knowledge in India concluded that:

> There is no clear demarcation between what belongs to the general community, specific community, or individuals within the communities. Certainly for the herbalists, as indicated in the results of the case study, herbal knowledge is treated as personal property. However, some of the knowledge they possess is relatively available in the same form in the general community due to the older tradition of sharing knowledge. The herbalists have continuously innovated what is available in the general community and hence they possess special rights to their innovations. It is hard to determine how the benefits should be shared if there is no clarity in the ownership (Sharma 2000).

In cases where there is distributed and common possession of knowledge,[27] complex issues of entitlement to any possible intellectual property rights also arise,

[26] See generally Cleveland, D.A., & Murray, S.C. (1997). The world's crop genetic resources and the rights of indigenous farmers. *Current Anthropology, 38*(4): 477–496 (discussing aspects of the debate over the protection of indigenous farmers' rights); Griffiths, op cit. (discussing the concept of exclusive rights as it is inherent in indigenous communities regarding magical knowledge). Shamans and other TK holder specialists may wish to restrict access to their knowledge for reasons other than because they consider it to be their property. For example, sacred knowledge, which may include knowledge of the therapeutic properties of plants, is often considered dangerous if it gets into the hands of the uninitiated. In other words, they may be concerned for the welfare of those who acquire the knowledge and try to use it.

[27] For an alternative classification of modalities of knowledge possession based on the concept of "negative" and "positive" community.

since Western IPRs systems do not provide for the granting of rights to communities as such. In many instances, in addition, the same knowledge may be held by more than one community, and an issue of geographical or historical priority arises (for instance, the use of *neem* derivatives throughout South and South East Asia).

The multiplicity of factual situations as to the possession of TRM makes it particularly hard to apply existing IPRs or to develop *sui generis* regimes.

Securing the protection of traditional knowledge, technologies, and resources according to the local regulations requires the existence of effective local governance structures and customary law, including property regimes, and respect for these structures and regimes from outsiders. This is easiest to achieve in countries where customary law systems can operate with relative freedom, as in much of Africa where legal pluralism often predominates. In such cases, the possibility arises for traditional rules and norms to be asserted with as much legal effect within that country as, say, patent rights, trademarks and copyrights. But whether customary laws regulating cultural, intellectual, and physical property are fully incorporated into national legal systems, are enforceable in local courts alone, or are just given some minimal recognition at the state level, the common assumption that traditional knowledge and resources are by definition part of the public domain becomes much more open to challenge than if customary law has no recognition at all.

Another issue is the problematic nature of the public domain concept, at least from the view of many traditional societies, in which TK holders, such as tribal elders, have permanent responsibilities with respect to the use of knowledge irrespective of whether the knowledge in question is kept secret or revealed to outsiders. Indigenous societies often consider each member as having *individual* rights and *collective* responsibilities that are linked inextricably. Indeed, the persistence of these responsibilities is probably more of a reason why the formal IPR system is inappropriate than the supposedly collective nature of customary rights over TK.

Barsh (2001) observes: *"Indigenous peoples have generally a sense of unique personal responsibilities to kin, clan and nation. Each individual's 'rights', then, consists of freedom to exercise responsibilities towards others, as she or he understands them, without interference."*

Besides, individual property rights over knowledge are not necessarily absent from many traditional societies, but these will often be accompanied by certain duties.

The attribution of invention is far from being a simple matter in many traditional societies. Many commentators emphasise the collective nature of creative processes in traditional societies, which they contrast with the individualistic view of creativity and of ownership that prevails in western societies.

The issue of the attribution of community knowledge is truly complex.While it is true that many indigenous cultures appear to develop and transmit knowledge from generation to generation within a system, individuals in local or indigenous communities can distinguish themselves as informal creators or innovators, separate from the community. Furthermore, some indigenous or traditional societies are reported to recognise various types of intellectual property rights over knowledge, which may be held by individuals, families, lineages, or communities.

The sources of much TK are difficult to trace, either because two or more peoples or communities share the knowledge, or because the author is simply unknown.

Some indigenous groups actually consider it presumptuous to attribute authorship to a human being or a group of people. Michael Blakeney (2000) states, *"if the beliefs and practices of Australian indigenous peoples are any guide, authorship may reside in pre human creator ancestors … Authorship is replaced by a concept of interpretation through initiation."* Nevertheless, for other groups, this may not be the case. For example, many of the 10,000 'grassroots innovations' documented by the India-based Honeybee Network are attributed to and claimed *by* individuals (Gupta 1999). The difficulties and inappropriateness of the existing intellectual property systems to protect community and indigenous rights is attributable to the fact that traditional knowledge often can not be attributed to a particular geographical location.

Finally, the negotiation process for the acquisition of TK can trigger complex issues. The companies of industrialized countries, with the exclusive background of traditional IPRs, have to face indigenous peoples that possess their own collective or communally-based systems of customary laws, with respect to classification of different types of knowledge, proper procedures for acquiring and sharing knowledge, the rights and responsibilities attached thereto. This problem can be overcome through the parties' mutual adaptation of the communication and negotiations skills between different legal cultures.

An important policy question in this context concerns whether the aims would be better fulfilled through systems that confer one people in general, and communities, in particular, certain rights over their traditional knowledge, or whether creation of para-statal monopolies over such knowledge would be a better alternative to ensure inter-governmental co-ordination. This is not easily solved because non-contemporary traditional knowledge comprises unarticulated and unrecorded intangibles, and there is an investment or cost necessary for its documentation into databases which can be privately owned.

3.3.4 Towards New Approaches and Challenges

To ensure appropriate access and benefit sharing, and to achieve the protection of traditional knowledge, new *sui generis* systems should be considered.

Apart from direct payment for collection and supply of the raw material for the herbal drug manufacturers, benefits for communities can be built up in other ways:

- **Database access**: Communities should be beneficiaries of revenues collected from databases containing TK. The Indian government has started a compilation called the Traditional Knowledge Digital Library, which contains public domain information about important medicinal plants. Similar databases will come up on the basis of biodiversity registers that are documenting the availability and status of bioresources. All such databases should levy an access fee after proper execution

of prior informed consent and material transfer agreements. Part of this access fee should be paid into a fund for communities.

- **Bioprospecting and Research fee**: Companies who wish to have a license to explore a country's bioresources should be required to pay a prospecting fee which should also go into the Community Fund. Similarly, when research programs are expected to yield commercially interesting results, either in the form of financial gain or new technologies, communities should be beneficiaries.
- **Milestone payments**: Would require prospectors to pay a fee for every 'milestone' reached during the research. This is to ensure a benefit to communities if their knowledge has been used, even if the users are not able to commercialise the results.
- **Gene bank access**: Access fees should be paid to obtain genetic material of crop plants, rare varieties, medicinal plants, and other economically important plants stored in Gene Banks. Research material should be exempt. This aspect has acquired greater significance now that India has passed Plant Variety and Farmer's rights Act. Under this, breeders of new plant varieties (using genetic material from public sources like the gene bank) will get a breeder's right and be entitled to make profits.

However, it should be noted that developing countries, where most of the TK exists, have limited resources, funds, and expertise. They are already challenged by the expensive task of establishing the existing IP laws-infrastructures, and as a consequence, efforts to also establish protection of TK will necessarily enjoy low priority. Moreover, the registration may be expensive for TK holders. It has to be considered that TK does not always exist in written form; therefore, there would be difficulties in using it as prior art for patent or industrial designs. Efforts to build a customary database for the purpose will be most probably constrained by lack of funds and expertise. It should be remembered that while databases in most cases would be a prerequisite for the protection, it will also make TK more open and more vulnerable to misappropriation. Finally, it will be the enforcement, a more difficult task, that will make the system worth its costly creation.

Commercialisation of the peoples' knowledge can be an effective way of generating incomes for them, provided this remains in their control, is sustainable, and equitable. It can also prove to be a powerful incentive for communities to retain their knowledge base.

Extreme care, however, needs to be taken to ensure that over-exploitation does not lead to permanently destroying the resource base. The interest in the Himalayan *Yew* (*Taxus baccata*) as a source of the anti-cancer drug, Taxol, has lead to the devastation of the *Yew* forests in Himachal Pradesh in India and other hill regions of Asia. The case of *kava* (*Piper methysticum*) highlights, as well many of the potential benefits and risks involved in the marketing of species 'new' to international consumers, the ways in which the botanical medicine industry can generate benefits for communities and countries upon whose knowledge and resources commercial markets are based. This plant, endemic to the South Pacific, has been traditionally used to alleviate stress and anxiety in the region. It is supposed to have other medicinal

uses, like treatments for skin ailments, asthma, and tuberculosis. In the Pacific region, farmers have transformed it into a cultivated species and have bred improved varieties. In the last decade, kava has entered the western market. Most high-quality bulk ingredient supply companies have acquired an interest in it. These companies are chiefly from Germany, Switzerland, the UK, and the USA. This has led to an explosion in demand for kava products that have placed unsustainable pressure on supply sources geared only to serve local use. Although local farmers are benefiting from price increases, the types of commercial relationships they arrange with international buyers might not be to their longterm advantage.

The challenge to sustainability of commercialisation is to devise incentives that fulfill four conditions:

- Access to biodiversity for local communities, so as to ensure their sustainable-livelihood systems should take priority over access for outside institutions or individuals.
- Assurance to individual healers or other experts, communities, and other stake holders of sustained access to the resources and viable collective responsibility for using biodiversity.
- Blending traditional skills/abilities to convert biodiversity resources into investments with or without value addition.
- Conservation of cultural lifestyles and value systems in such a manner that basic needs are met without impairing the life support systems of local communities.

Numerous groups of indigenous peoples have made moves to assert their right to discover and make what they consider appropriate use of new knowledge derived from their habitat.

To protect traditional knowledge, new approaches are required at the national and international levels. At the national level, measures must be developed in light of national priorities, and the needs of indigenous and local communities. A national legislative approach alone cannot ensure that entreprises from other countries do not misappropriate the genetic resources of the source countries. At the international level, a framework will be required to protect against misappropriation, and to ensure fair benefit sharing. No international system has yet been developed to adequately preserve traditional knowledge, protect the rights of knowledge holders, and compensate them equitably for its use.

Three main planks of new laws to promote biological resource innovations, which could equitably balance indigenous community interests, can be identified:

1. Heritage legislation, which would recognise biological and cultural heritage as inextricably linked and provide authorities and incentives for community self-management initiatives.
2. Biodiversity conservation and national biodiversity registers, linkable at some stage to global registers. Together with a transparent system of transfer of biotechnology and organic and informational resources under different kinds of permissible arrangements with prior informed consent and participation of indigenous communities, this would enable them to choose from different kinds of structurable economic incentives.

3. Institution of plant varieties' protection and farmers' rights under a *sui generis* system after reviewing the accessibility of *ex-situ* collections in genebanks and germplasm banks for food and agriculture, and then extending the model to healthcare, based on community control of *in situ* and *ex situ* collections, including decisions of what is allowed to be preserved *ex situ* and under what conditions.

Many issues relating to protection of IPRs remain yet to be fully understood and addressed, as for example:

- The collective ownership/custodianship of traditional medicine.
- The problem of ownership and exercise of rights in traditional medicinal knowledge which exists across different countries in a region.
- Practical means for the exercise and management of rights.
- Mechanisms for application of customary law to protection of traditional medicine.
- The need for comprehensive documentation standards, for traditional medicine.

In order to achieve a better understanding and a wider consensus of these issues, it is necessary to address basic conceptual problems and test practical solutions to the protection of traditional medicine. There is a need to debate with the all the stakeholders (as practitioners of traditional medicine, representatives of the medical community, the pharmaceutical and biotechnology industries, intergovernmental organisations, local communities etc.). Lasting solutions can only be found if all stakeholders work together and bring their specific expertise and experience towards a common understanding and solution of the problems.

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Chapter 4
Gram Mooligai Limited Company (GMCL) – An Alternative Bioprospecting and Development Model: Constitution, Structure and Its Functioning

Abstract Traditional or Indigenous science relates to both the science knowledge of long-resident, usually oral culture peoples, as well as the science knowledge of all peoples who as participants in culture are affected by the worldview and relativist interests of their home communities. Traditional science (TS) has been recognized only lately in western science as a valuable source of products and treatments for health care. As a consequence, diverse components of IS have been appropriated under intellectual property rights (IPRs) by researchers and commercial enterprises, without any significant compensation to the knowledge's creators or holders. This chapter investigates whether novel forms of commercial uses of biodiversity and associated knowledge carried out by indigenous communities are possible through the creation of enterprises such as GMCL. The chapter aims to shows how an alternative representation of bioprospecting at grassroots level can be an instrument to enhance the local livelihoods of communities and promote their empowerment and capacity building. The results show that positive outcomes of this innovative form of participative bioprospecting initiative are evident but that challenges still remain.

Keywords Commercialization of biological resources • Traditional knowledge • Indigenous communities • Bioprospecting • Biopiracy

We shall now start by giving a brief presentation of the GMCL (Gram Mooligai[1] Company Ltd). Some introductory elements of FRLHT (Foundation for the Revitalization of Local Health Traditions) and CCD (Covenant Center for Development), two NGOs who have played an important role in the development and success of GMCL, will also be given. As we shall see in more detail in this first part of the study, GMCL is part of an institutional network that includes several

[1]The meaning of "*Gram Mooligai*" in Tamil is "Village Herbs."

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NGOs and research centres. This preliminary information will be helpful in gaining initial insights into the GMCL model and the main peculiarities of the other organizations concerned.

4.1 Brief Presentation of Gram Mooligai Limited Company

4.1.1 GMCL (Gram Mooligai Company Limited)

The *Gram Mooligai Company Ltd.* (GMCL) was established in the year 2000. The shareholding of the company is represented by the cultivators and gatherers of medicinal plants. The latter, who are organised into groups called *Sanghas*, supply directly to GMCL. The Board of the company, which decides the company policy and its periodic reviews, is drawn from these groups.

GMCL performs a dual activity:

- It supplies medicinal herbs to the pharmaceutical enterprises (Himalaya Drug Company, Natural Remedies, Ompharma etc.), playing an intermediary role between these companies and the local farmers.
- It commercialises ayurvedic medicines produced by local communities in Sevayoor (Tamilnadu) under the brand of *"Village Herbs."*

The commercialisation of the ayurvedic medicines is made in both rural and urban areas.

In the rural areas, the commercialisation is entrusted to local sales representatives. These latter are generally selected from villages' organizations called *Kalasams*. At urban areas, the GMCL products are sold through physicians and medical shops.

The primary objectives of GMCL are to promote and maintain sustainable cultivation and utilization of medicinal herbs, besides giving back the benefits to rural communities who are engaged in the same.

4.1.2 FRLHT (Foundation for the Revitalization of Local Health Traditions)

The Foundation for Revitalization of Local Health Traditions (FRLHT) is a registered Public Trust and Charitable Society, based in Bangalore (Karnataka), and started in 1993. FRLHT seeks to revitalize Indian local health traditions through a range of field activities and research and extension programs.

The main areas of action are:

- Conservation of the natural resources used by traditional medicine system.
- Demonstration the contemporary relevance of the theory and practice of traditional medicine system.

- Revitalization the social processes (institutional, oral and commercial) for the transmission of traditional knowledge of healthcare and promotion of its wider use and application.

In reference to the first point, FRLHT has carried out several botanical and ecological surveys with the aim of cataloguing the medicinal plant species in India. These studies have been alternated by conservation projects, following an action research approach typical of this organization. One of FRLHT's major projects has been to conserve species of medicinal plants in Indian forests in conjunction with state governments and the participation of local communities.[2]

Another important aspect of the work of FRLHT is testing of medicines and products, and development of standardization[3] using modern techniques.

The director of the Laboratory, Dr. Padma Venkat explains: *"Traditional healers often depend on subjective parameters like taste, smell and unwritten knowledge to determine the quality of the ingredients and the efficacy of medicines. FRLHT is working to capture and document these using modern methods. This will make the parameters more objective so that any one can check them."*

FRLHT has also developed technical skills and know-how to develop medicinal and health products. The laboratory has expertise in handling raw drugs, semi-processing and storage, and in production optimization.

Another important role played by FRLHT is the training activity and spread of information.

FRLHT has, over the past 10 years, organized more than 200 training programs for forest departments, NGOs, and communities participating in the medicinal plants conservation projects. FRLHT currently specializes in developing need based training courses and educational events that serve as supportive means in the process of conservation and revitalization of Indian Medical Heritage.

In reference to GMCL, the role of FRLHT has been determinant to mobilize the initial funds necessary to start up the enterprise. FRLHT's contribution has also been important in terms of training activities and capacity building process for the members of local communities involved in the *Sanghas*. FRLHT also has played an important role in GMCL model in technical terms (processes of standardization, quality control, product development etc.).

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[2]This initiative has resulted in the setting up of a network of 55 *Medicinal Plant Conservation Areas* (MPCA) across different forest types and altitude zones in these five states of peninsular India. The most important purpose of this network of MPCAs is that it serves as the gene bank of medicinal plant resources of the region. The network of MPCAs captures the inter and intra specific medicinal plant diversity of peninsular India. The MPCAs capture around 2,000 medicinal plant species, which represent 50% of the medicinal plant diversity of the five states, and significantly includes over 75% of the RED Listed Species of these states. For all the MPCA sites, detailed floristic studies on medicinal plant diversity including the threatened, traded, and endemic plants have been undertaken.

[3]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.

4.1.3 CCD (Covenant Center for Development)

The Covenant Centre for Development (CCD), an NGO based in Madurai (Tamilnadu), was promoted in 1988 by a team of professionally trained social work students and teachers. Initially, the organization worked with the street children in Madurai and gathered valuable insights in rural and urban poverty. Subsequently, CCD analyzed the root causes for children ending up in the streets. The failure of agriculture, resulting in lack of employment opportunities in the rural areas, which in turn led to migration to urban centers for work, was found to be the major contributory factor. This prompted CCD to address the issue of street children with a different perspective. The organization decided to focus on enhancing the livelihood opportunities of rural communities in their area.

CCD currently works with communities in over 150 villages in Madurai, Sivagangai, Virudhunagar, and Dindugal Districts of the Tamil Nadu state. The areas covered fall within the Ramnad plains and are part of the semi-arid belt.

This NGO has gained considerable experience in mobilizing rural communities in the past 15 years, notably in the context of micro-credit, with the creation of Self Help Groups (SHGs). Working with women-led groups has given CCD insight into the priorities and needs of local communities, and has helped the establishment of linkages of trust between the fieldworkers and these rural communities. This has facilitated the involvement of the villagers in the GMCL initiative.

In reference to GMCL, CCD plays a major role in facilitating the process and the operations in promoting the constitution of *Sanghas,* and in giving managerial and technical assistance and training to their members. The role of CCD will be analyzed in detail in the first part of this study.

4.2 India – The Area of Intervention of GMCL

The Tamilnadu State is situated at the south-eastern extremity of the Indian peninsula, bounded on the north by Karnataka and Andhra Pradesh, in the East by Bay of Bengal, in the South by Indian Ocean, and in the West by Kerala State. It lies between 8°5′ and 13°35′ at northern latitude, and 76°15′ and 80°20′ of eastern longitude, with an area of 130,069 km^2 (50,154.7 sq. miles).

The topography of Tamilnadu is varied and diverse. Of this 1,300,058 km^2 land area, 17.6% is forested. The land can be divided into five major physical divisions: the Kurinji (mountainous region), the Mullai (forest region), the Palai or arid region, the Marudham or the fertile plains, and the Neidhal or coastal region. The Eastern and Western Ghats meet in Tamilnadu and run along its eastern and western boundaries. The Cauvery River, originating in the Coorg district of the neighbouring state of Karnataka, is the lifeline of the state. Dry lands are bestowed with dry-deciduous forests, thorn forests, scrubs, and mangroves. The Western Ghats and a few cooler regions are endowed with evergreen forests, sholas, and grassland.

Being a tropical land, Tamilnadu is rich in various types of flora and fauna. Wildlife sanctuaries, like Mudumalai and Anaimalai, are habitats of elephants, tigers, bison, and a variety of monkey and deer. There are more than 3,000 plant species that are found in Tamilnadu and a majority of them are in the mixed deciduous forests of the region. These plant species include Eucalyptus, Palmyra, Rubber Cinchona, Anogeissus latifolia, Indian laurel, etc. A variety of medicinal herbs are found in the Palani hills and Courtallam.

Agriculture is the primary occupation of about 70% of the rural population of Tamilnadu. Around 34% of the state's population resides in urban areas while the remaining population resides in the rural areas. Tamilnadu agriculture is heavily dependent on the river water and monsoon rain. The main food crops that are grown in Tamilnadu are rice, pulses, and oil seeds, while the important commercial crops of the state include sugarcane, tea, rubber, cotton, cashew, and coconut. The principal food crops are rice, maize, *Jowar*, *Bajra*, *Ragi*, and pulses. The cash crops include cotton, sugarcane, oilseeds, coffee, tea rubber, and chillies.

In Tamilnadu, the districts where the *Sanghas* have been constituted are Dindigal, Trichy, Virudhunagar, Ramanad, Sivagangai, Madurai and Theni. There have been factors specifically related to these areas that contributed to the intensification of GMCL work in the medicinal plants sector in these districts. Firstly, these districts are naturally rich in medicinal plants and are a medicinal plants trade zones. The main market places for medicinal herbs are the towns of Dindugal, Virudhunagar, Madurai, and Tuticorin.

The second criteria is related to socio-economic considerations. The villages where the GMCL activity takes place are drought prone areas, receiving only sporadic rains over a 4 month period every year. This is especially the case for the villages located in Virudhunagar, Sivagangai, and Theni districts. The communities living in these areas survive on rain-fed agriculture of paddy, groundnut, and pulses. The villagers living in these districts, therefore, need to support their agricultural practices with supplementary economic activity, such as herb gathering, for income support.

4.2.1 Some Socio-Economic Characteristics of Herb Gatherers and Farmers

The herb gatherers and farmers involved with GMCL belong mainly to *scheduled castes* or *scheduled tribes* (Servar, Konar, Rettiyar, Naiyakkar etc.). These members of the communities do not possess land and are mainly laborers. The *labour force participation* among these scheduled tribes is high for both males and females and represent almost two-third of the total population. These tribal communities are predominantly landless. Only a marginal part of these household possess small parcels (with an average size which varies between 2 and 5 acres). Among the families who possess land, the marginal holdings predominate. Only a small percentage of these households possess land parcels that exceed 5 acres.

This reflects the fragility of the livelihood options for these *scheduled tribes* and their vulnerability to income variations. Of the total landholdings, only a very small percentage of the land holdings are irrigated. Among marginal holdings, only a minority of the tribal lands get irrigation facilities.

Nearly the majority of these tribal families own livestock. Nearly one-third of families own one to two animals.

A little minority of these tribal households own agriculture related equipment/assets, such as bullocks, ploughs, carts, and tillers. This indicates the severe landlessness issue among these tribal members. Generally, these tribal members own movable assets in the form of consumer durables. Not a single tribal land owning family possesses pump sets for irrigation. This shows the very low asset owning capacity of these households.

Some of the surveyed villages possessed basic infrastructure and facilities, such as availability of primary school dispensaries, electricity, safe drinking water (through hand pumps), post-offices, bus stands, marketing facilities, either within the village itself or available within a distance of 5 km.

4.3 GMCL History and Constitution

In this part, we explore the evolution of GMCL model, as well as its structure and functioning mechanisms. The role played by the main actors that compose the GMCL structure, as well as the interaction between the different strata of the organization, will also be examined. We shall proceed by analysing whether the company's structure and its functioning mechanisms are instrumental to achieve its stated objectives.

The aim is to understand the distinctive elements of the GMCL model.

GMCL originated from an idea of G. Raju, an IRMA (Institute for Rural Management) graduate, who worked on enterprise development in the rural sector. In 1998 G. Raju presented a paper on medicinal plant enterprises at the Medicinal Plants Conference organized by FRLHT in 1998. G. Raju expressed the idea of starting a medicinal plant based enterprise which would be fully community owned. The main objective of this enterprise should have been the generation of income and employment opportunities for the rural communities through medicinal plant collection and cultivation. This idea caught the interest of Darshan Shankar, the Director of FRLHT, who decided to help G. Raju to convert his aspiration into reality.

At that time, FRLHT was implementing a program called Income Generation Program (IGP) for conservation and sustainable use of medicinal plants with the involvement of communities. This program was sponsored by DANIDA through the Ministry of Environment and Forests (MoEF), within the Government of India.

IGP program involved the active participation of local communities organized in village organizations such as the SHG (Self-Help Groups). In the framework of IGP, FRLHT provided training and financial support to CCD and to other NGO partners to both develop conservation education and livelihood support programs. An "ethno-medicinal" garden was developed over 30 acres by CCD, where about 12,000 saplings belonging to 524 medicinal plants species were raised, used by the ethnic communities in the district.

The creation of GMCL was not a smooth process and found initial resistance from an ideological point of view and obstacles in its implementation.

The first difficulty was constituted by the fact that the representatives of state forest departments on deputation in FRLHT looked upon the idea of FRLHT promoting a commercial venture based on medicinal plants. A contradiction seems to be intrinsic in the constitution of an enterprise such as GMCL: on one hand FRLHT was working towards conservation of medicinal plants through *in situ* and *ex situ* initiatives and on the other hand it was sponsoring a commercial venture active in sale of medicinal plants collected from the forest areas.

Finally, a solution was found: it was agreed that GMCL would not trade in medicinal plants sourced from wild and would limit to those collected from non-forest areas and would not deal in banned forest products. Also, GMCL would train the gatherers in sustainable harvest of medicinal plants and would encourage cultivation of medicinal plants rather than collection. This would make it possible to conciliate the conservation of natural resources and the enhancement of local livelihoods.

Another controversial issue was represented by financial decisions. There was around Rs 50,000 unutilized in the Income Generation Program (IGP) already funded by DANIDA.

These funds were planned to be utilized for GMCL. Nevertheless, the DANIDA review team was not keen in this respect: the idea of a medicinal plant based community enterprise was not in the original plan document and funds from IG components should have not been diverted to this venture. After several deliberations, DANIDA agreed to support this venture on the condition that IG funds would not be released to GMCL, which is a commercial venture, but to the MPCPs (Medicinal Plant Conservation Parks) partners for undertaking cultivation and collection of medicinal plants. It was agreed that GMCL would get the produce from the MPCPs, make a sale, and could keep the profit. By this way, DANIDA felt that its funds would reach the farmers and gatherers who would be subsidized for undertaking cultivation.

This new venture would have had three-tier partnership:

- FRLHT to provide funds for procuring medicinal plants through collection and cultivation.
- The MPCP partners to organize the SHGs into collection and cultivation and train them on quality and other aspects.
- GMCL management to take care of marketing of the produce, assuring buy-back and fixed price.

Just a few of the MPCP partners decided to be involved in the GMCL initiative, due to the fact that many of them were not confident in undertaking operations on a commercial scale. Those non-participating MPCPs in the GMCL venture demanded that the IG funds of the program be released as loan.

Additional funds had been mobilized by FRLHT for the creation of GMCL. FRLHT contacted the Ford Foundation for financial support. The idea of creating a community-based enterprise active in herbal sector was accepted, and a grant was provided to FRLHT to set up GMCL.

The form of the enterprise was discussed at FRLHT and the options were weighed: a cooperative, public limited company, or a private limited company.

> *We wanted to promote it as a cooperative, but the law in Tamil Nadu does not encourage that. Yet, the other practices are like a cooperative. The gatherer and cultivator sanghas become the members in the company,* affirms Raju.

Although GMCL was model on AMUL (the Indian dairy development cooperative that originated in Anand), the option of taking the form of cooperative was rejected for the reason that it would be governed by cooperative laws, which could sometimes be too limiting. The private limited company option was rejected for the reason that ownership was restricted to a maximum of 50 members. The form of a public limited company was the option that was chosen for the reason that there is no limit to shareholders, and profit sharing through dividends was innovative in the rural sector.

4.3.1 Groundwork: Medicinal Plant Conservation and Research

The conceptualization of GMCL had, as its basis, several programs and field studies carried out by FRLHT and CCD. These studies have been instrumental for these organizations to realize the importance of venturing into the sector of medicinal plants in order to enhance local livelihoods through the constitution of a community-based enterprise.

The approach followed by FRLHT and CCD involved *research* and *action* and consisted in:

- Documentation, research and conservation of medicinal plants and herbs (knowledge).
- Dissemination and awareness among the villagers (consolidation and strengthening of traditional knowledge).

The majority of FRLHT and CCD's documentation, study, and research work in the area of Medicinal Plants are broadly classified under the common projects '*Medicinal Plants Conservation Programme*' and '*Validation of Local Health Traditions*.' With these projects began the collaboration between CCD and FRLHT in 1994.

FRLHT and CCD's involvement with documenting the medicinal plants and related sector began with recording the *naattu vaidhyar*'s (traditional folk healers)

information, their health practices, remedies, and local species of medicinal plants used by them for preparing their cures.[4]

The natural next step of this process of knowledge acquisition, through documentation and research, has been the sharing of such knowledge with the immediate concerned groups, that is to say the local villages and their local institutions (*Kalasams*). CCD team got involved with dissemination, as well as mobilizing community participation, almost in parallel activity to their research and conservation programs. All their dissemination and awareness activities fall broadly under a funded sub-project, *'Revitalization of Local Health Traditions.'*

In the purpose of educating villagers and increasing their knowledge of medicinal plants and traditional health practices, a Medicinal Plants Conservation Park (MPCP) has been developed by CCD in Sevayoor (Madurai district). The park consists of an Ethno-Medicine Forest (EMF), spread over 33 acres with a collection of over 500 plants species.[5]

The conservation park at Sevayoor has served as a demo for others in the villages to promote and maintain such herbal parks in other areas. Starting thus as a guide to conservation education from its own campus, CCD evolved to give several conservation, training and educational packages to different local communities, besides organizing conservation and awareness activities.

The Benchmark study of the Kitchen Herbal Garden (KHG) program in 1999, for evaluation of community participation, led CCD to the next stage in the process of evolving community ownership. This study for the KHG program was conducted in conjunction with the local village organizations (*Kalasam*) to analyze changes in community health, food regime and routine, ability to manage their medicinal needs etc., and to evaluate community participation.

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[4] About 200 practitioners have been covered to document over 700 practices. Of these, about 55 were *Visha Vaidhyars* (poison healers), 31 were traditional birth attendants besides bonesetters, veterinarians, and general health practitioners. A total of 578 medicinal formulas have also been recorded in this documentation. In addition to this health and medicinal aspect, information related to their socio-economic and cultural aspects were also collected. Besides Health Practitioners, about 600 women in about 400 households from 60 villages were interviewed for recording the household remedies, traditional food recipes, and regimen that they are familiar with and use. To encourage social recognition and promotion of grassroots unaided innovations and traditional knowledge, FRLHT and CCD have also documented a total of 13,000 such practices of the knowledge contributors for the National Innovation Foundation (NIF), Ahmedabad. Through FRLHT and CCD's involvement, innovations in the area of health and medicine also began to be recognized for the annual NIF awards and inclusion in the National Innovations registry.

[5] Besides this primary attraction, other components of the park include:

- A Herbarium Seed Raw Drug museum (HSRD) that houses seed samples of over 900 species of traditional medicinal plant and herb varieties.
- A demonstration Garden where species are organized in 12 themes according to their properties, changes in them on interaction with other aspects of nature, and according to how they are used by the local community. These include the water garden, *pancha bootha* (five elements) garden, rock garden, oil garden, *thamboola* garden, *anchara-petti* garden etc.

These studies showed that, in poor households, health expenses were high, but for the resource-poor rural women, their own health figured last in the priorities, and they were often neglected. Targeted at these rural women specifically, the program was established to promote the maintenance of a garden with commonly used medicinal plants in the backyards of their own homes, and intended to train them in local health traditions (medicinal plants based home remedies). The training inputs included strategies and cures to combat the health problems that women in particular suffered from in these areas. Hence, simultaneously, the program addressed the issue of medicinal plant conservation, as well as the health concerns and its economic aspect, in rural communities.

The success and the impact of the KHG program led CCD and FRLHT to undertake the Medicinal Plants Field Study in the states of Karnataka, Tamilnadu, and Kerala, in which data was collected from gatherers, agents, agency, intermediaries, traders, nursery entrepreneurs, cultivators, exporters, and industries. Subsequently, the Enterprise Feasibility Study was also conducted. This research formed the basis for the launching of GMCL.

Before the start-up and implementation phase of GMCL, CCD also conducted several other research and validation studies. Some of these studies pertained the Medicinal Plant Research and Field Study, as well as assessment of collection potential, developing databases on collection and cultivation, sustainable harvest of medicinal plants, developing SOPs (Standard Operating Procedures), value added products for primary health care, research notes on the agro-trials for 15 species, organic farming for medicinal plants, and the Enterprise Feasibility Study.

This way of proceeding shows how the conception of GMCL and its implementation are well rooted in local realty.

One of the strengths of the GMCL model is represented in the focus on local priorities and needs. These priorities and needs have been identified and analyzed through participative assessment exercises and the mentioned field studies. The action research undertaken has consisted in an iterative inquiry process that balances problem solving actions implemented in a collaborative context with data-driven research to understand underlying causes enabling future change (Reason and Bradbury 2001).

In this section, we will briefly present the village organizations (*Kalasams*) that preceded the constitution of GMCL. Indeed, the creation of the *Sanghas* is the last stage of the CCD involvement with rural villages. We will subsequently describe the *Kalasam* s' activity and their role in promoting rural development inside the village community.

This will provide us with an understanding of how the constitution of GMCL is diachronically situated in the village reality and how continuity between the different village organizations can be found. This will also give account of the ways in which the *Sanghas* enter into relationships with the other village organizations.

Our aim is to portray GMCL as an organization imbibed into the local reality and to show how the creation of synergies between them has been possible at the local level.

The *Kalasams*[6] had been formed by CCD for the purpose of collective savings to be forwarded as credit to the members of the group in times of need.

The micro credit organizations' model is structured at different levels:

- *Kalasam* group[7] (inner-most circle)
- Cluster level consultative committee[8] (middle circle)
- *Mahakalasam Federation*[9] (outer-most circle)

While the *Kalasam* groups are directly linked to the Federations, the cluster is an informal network that allows groups to share information, place demand for loans, widen their contacts and repay loans, and access economic information and training/ knowledge resources.

The first *Kalasam* began with the organizing of a small women's group in Pulvakkarai village (Narikudi Block), in 1992–1993. This block was chosen because it was one of the 125 *taluk*[10] identified as chronic drought-prone by Government of India.

In 1994, the *Kalasam* groups benefited from training organized by CCD in Integrated Family Life Management and Environmental and Health Education. Some exposure trips for the *Kalasam* members were also organized. The women were taken to other organizations, and helped through understanding the working of a women's Federation, an entity comprising of a number of smaller savings groups

[6]The 'Kalasam' is an arrangement of a brass or silver pot filled with water, holding a coconut arranged amongst mango tree leaves at its mouth. This is regarded as auspicious and used to initiate Poojas and invoke the Goddess Shakthi in the local culture. When the women started saving for contingencies again, they decided to give the name 'Kalasam' for their savings' group, collect savings, and work with this name. The savings were collected in the name of the clan deity.

[7]Each Kalasam group has not more than 20 members and elects 2 leaders. Every village can host different Kalasams according to the numbers of villagers who wish to be involved. At the Kalasam level, the groups take care of their financial activities like collections of savings, loan applications and repayments, passing resolutions for loan applications to the Mahakalasam Federation, etc. Besides the financial activities, discussions also take place on other social and enterprise schemes that are run by the Mahakalasam and executed by the Kalasam groups at the village level.

[8]The cluster is the next outer circle of the Kalasam group in the Mahakalasam structure. The representatives from the Kalasam groups join together to form the cluster level consultative committee. Around 25 Kalasam groups come together to form the cluster at the parent-village level. The cluster level consultative committee is the intermediary entity and maintains the communication between the Mahakalasam (Planning), and the Kalasam groups (Execution). It is the clearinghouse of loans, applications, resolutions and so on from the Kalasams to the Federation. The leaders evaluate and assess the applications that come to it and present those which are relevant and viable, to the Federation Board members. This is also a space that is used by the group leaders to discuss common issues of concern, share, help each other, and learn from the others' experiences.

[9]The Federation is the outer-most entity of the Mahakalasam structure and maintaining most of the communication with external entities like individuals, banks, NGOs, and other external organizations. Five clusters come together to form a Mahakalasam Federation. Currently, there are 4 Federations. The Mahakalasam Federation acts as the community bank and the Enterprise support entity. It manages the financial transactions, like loan disbursement and advise, loan repayment procedures, Interest payment etc., besides the group savings accounts.

[10]A *taluk* is a subdivision of a district in South Asia.

organized into a certain structure. This was done by taking them to the Kalanjiyam Federation, based in Azhagar Koil near Madurai affiliated to the NGO, DHAN.

The presence of *Kalasam* increased during the last few years. In 1993–1994, there were over 68 *Kalasams* in 36 hamlets. After 2 years of expansion and consolidation, the first *Mahakalasam* Federation from Pulvakkarai village, consisting of 68 *Kalasam* groups, was registered as a Trust in 1996. The second was registered in 1999 from the coastal Suranam area.

These village credit groups have evolved to a network forming a much larger entity, the *Mahakalasam* Federation, supporting and involving over 42,000 families.

4.3.1.1 Programs, schemes and projects initiated or managed by Kalasam/Mahakalasam

As the *Mahakalasam* Federations began to be established as a Community Based Financial Institution in the village, they ventured into initiatives and projects that looked at livelihood and economic issues of other occupational groups/communities in the village, besides issues of development, sustenance, and conservation concerning the village as a whole.

An inventory was taken of all *Kalasam* members and their families, i.e., the skills, resources, knowledge, occupations available with them, particularly those that are local and not dependant on external factors. This resulted in the identification of different categories of community enterprises in the village (for instance based on *neem* seed collection, charcoal making etc.) and of schemes to support such community enterprises.[11]

The *Kalasam* women similarly run other institutions, which include both business ventures and welfare activities. These include the *Naattu Vaidhya Shala* (Traditional medicine pharmacy), nursery, health and eye camps, a seed bank, Medicinal Plants Nursery, 4 schools, primary health center with traditional folk healers, etc.

Networking and sharing of information represent an important function of *Kalasam*/*Mahakalasam*. Besides expansion in their area of work, they have also started training organizations and villagers from other parts of India in setting up such women's Federations for livelihood improvement and resource mobilization for building community enterprises.

GMCL seems to be well imbibed in the *village network organization structure* and integrated into the precedent ones. This integration between the newly established village organizations (*Sanghas*) and the previous ones increases the synergy between them and represents a distinctive element of GMCL model.

[11] '*Income Generation Programme'* (IGP) is a *Mahakalasam* undertaken activity and regarded as one of their major projects. Through loans and other schemes, the purpose is to convert emergency and routine loans to IGP loans, for instance, for petty business, trade etc. Supporting community enterprises and promoting livelihoods involves providing access to credit to the enterprise activity, providing information from different markets, collectively manage resources to provide links with institutions and markets, and value addition to goods.

The link between *Kalasam* and GMCL is evident since the constitution of this community based enterprise.

When it was decided that this concept would be piloted in the Virudhunagar district, CCD, along with *Mahakalasam*, undertook a major share of the responsibility, and took charge of initial community organization and mobilizing of share capital besides also the market surveys and the groundwork study for trading in medicinal plants sector.

The role of *Kalasam* has not just been important in the constitution phase of GMCL but has increased in the last few years. At the beginning, GMCL focused its activity exclusively on the sale of raw material. *Sanghas* represented the concerned village organization. Since 2004 the scope of GMCL activity doesn't just involve gatherers but also members of *Kalasams*/*Mahakalasam*. Until date, *Mahakalasams* have marketed the semi processed Medicinal Plant products by sales through *Kalasam* members.

The participation of *Kalasams* and *Mahakalasam* is not just limited to the sale of GMCL products, but it also involves a broader commitment since an earlier stage. The *Mahakalasam* has assisted GMCL in the constitution of a Processing Unit (SPU) to produce medicinal plant products at the local level (close to Sevayoor village). The members of *Mahakalasam* contributed in undertaking the initial market survey before setting up the unit, in 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 the GMCL initiative has also assumed a financial dimension. Fifteen Kalasams have invested Rs 5,000 each and have become partners in profit with GMCL, in the SPU endeavor.

In the future, a further financial involvement of the *Kalasams* in GMCL activity 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.

The existence of previous village organizations allows GMCL and the members of the *Sanghas* to benefit from different village-centered services present in the village, such as credit, training, etc.

The *Mahakalasam* in the Pulvakkarai, Suranam, and Natham villages are the head-offices of two centers, such as the BDS (Business Development Service Center) and the CFC (Common Facility Center). The BDS and CFC have been created with the collaboration of CCD to support the different livelihood activities in the area and to promote entrepreneurship among the women. Currently, BDS provides services to about 1,000 medicinal plant gatherers and cultivators. Capacity building programs, entrepreneurial training, inter-mediation with financial institutions, effecting linkages with service providers and markets, value addition services, provision of tool kits and other equipment, alternate building material, documentation services for their practices, business information services, assistance with sales outlets, and developing guides and manuals are some of the services offered by these centers.

As a consequence of being a part of a wider organizational network at village level, GMCL has been able to benefit from different services already existing at community level. The social exchanges within village organizations allow a transfer of information and knowledge (Ahuja 2000). This facilitates its action and increases its performance.

When diverse individuals and their organizations interact with one another, they begin to mutually understand the common needs and priorities (Wilkinson 1991; Luloff and Swanson 1995). Such action provides the individuals with the ability to retain community identities, maintain local control over decision-making, and address their own development needs.

4.4 GMCL Structure and Functioning Mechanisms

According to the definition of UNCTAD (1993), the organizational structure *"defines lines of authority, coordinates flows of resources and establishes mechanisms of accountability. Structures define how the different functional and geographical units that operate under of the scope of common governance of the organisation are linked together."*

This implies the analysis of the link between the elements of the organisation that delineate the direction of authority and responsibility and that direct the flow of resources and information.

- What is the structure adopted by the GMCL model?
- Up to what point is it decentralised?
- How does this structure influence the transmission processes of information and knowledge inside the organisation?
- How effective coordination and communication between the different levels are assured?

The symbolic-interpretative perspectives, such as Giddens's *structuration theory*, remind that the structure of an organisation is in a constant state of flux.

- In which way is this applicable to GMCL? Are there any changes in the organization structure planned for the next future?

These aforementioned points will be object of our analysis.

We will now briefly analyse the role played by the main actors that compose the GMCL structure. This is important in order to understand the specific contribution that every single sub-entity brings to the model.

The structure of GMCL is composed by the following entities (Fig. 4.1):

- *Sanghas*
- GMCL
- CCD

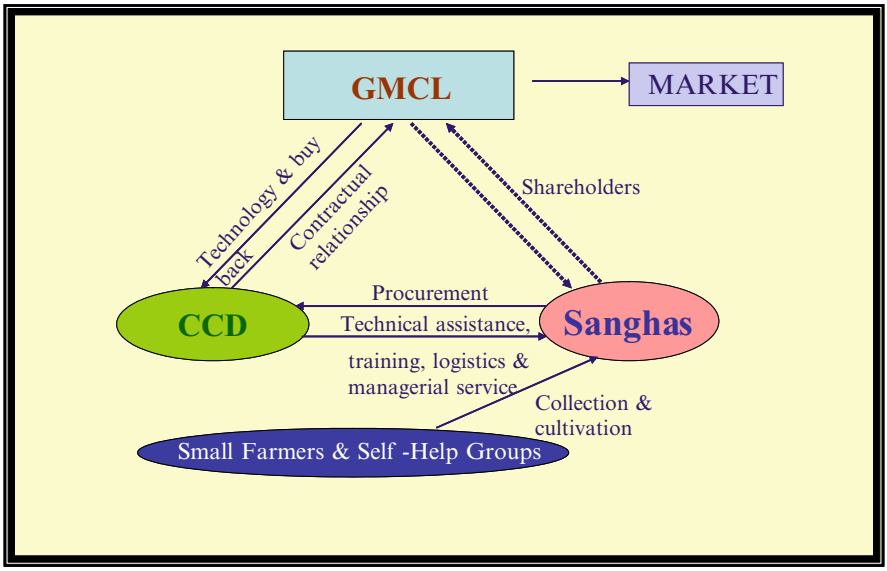

Fig. 4.1 The GMCL structure and operations

4.4.1 Sanghas

The *Sanghas* are village organizations composed of a maximum of 20 members. The size of the *Sanghas* varies according to different villages. On average, the number of members is between 10 and 15. Several *Sanghas* can be present in a single village, according to the number of villagers who are willing to be involved in the initiative. A group size of not more than 20 members is suggested as ideal for forging solidarity among members and for effective monitoring of their performance.

The benefit of being a member of the *Sangha* consists of the pursuit of group enterprise activities: the *Sanghas* have the function of coordinating the activities of the farmers belonging to GMCL. These activities consist of collection, harvesting, cleaning, drying, weighing of the raw herbs, and also includes the mobilisation of savings (see photos 4.1, 4.2, 4.3, and 4.4). Another important objective of the *Sanghas* is the building of self-help capabilities of the rural poor. Income generating activities are promoted either as a group or as individuals, by providing microcredit and giving technical guidance, so that poor families are brought above the poverty line.

The success and the creation of self-help groups (SHGs) in India is very high: the number of these groups is estimated to be more then a million. These village organizations involve more then 120 millions of people, 90% of whom are women (Hofmann and Marius-Ganou 2007). The difference with other microcredit organizations is represented in the fact that the SHGs provide the members with many more services on top of microcredit (scolarisation, health services, etc.).

Conceptually, a *Sangha* targets weaker sections: its members are exclusively women. This target has been selected, as the activity of gathering is predominantly undertaken by women. The herb gatherers and farmers involved with GMCL belong mainly to *scheduled tribes,* such as *Servar*, *Konar*, *Rettiyar,* and *Naiyakkar*. In general, *scheduled tribe* families constitute the most vulnerable, and economically, the most backward, among the different communities. These tribal communities are predominantly landless. Only a marginal part of these households possess small parcels (with an average size which varies between 2 and 5 acres). Among the families who possess land, the marginal holdings predominate. The major source of income of those households comes from the work of the male members, husband, father, or others. 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 then one third, an indication that this agency catered primarily to the needs of the poor.

In examining the socio-economic profile, the majority of the selected members belong to the age group of 30–45 years, and the majority of them have a family size ranging from 3 to 5 members.

In the majority of the *Sanghas*, the group meetings are held only once a month. The group leaders affirmed that this practice was decided upon unanimously, as all the members were occupied in various activities.

It is also seen that the percentage of attendance varied from 60% to 70%. The monthly meeting, which usually lasted for about an hour, discussed common issues

linked to production (harvesting procedures, drying methods, transportation etc...) including community problems.

The process of constitution of a *Sangha* represents a continuous process that involves several phases. The methodology for the constitution of the *Sanghas* follows a specific procedure. First, public meetings through the villages are organized by the field officers of CCD in a targeted region. The CCD field officers explain to these women the concept of the *Sangha*, by personal interactions and group meetings. Selected representatives from other village organizations are invited to attend these group meetings, in order to provide additional information. An understanding on the concept of sustainable harvesting and the implication of being part of GMCL is given to the women interested in forming the *Sangha*.

Every Sangha elects two members: the President and the Treasurer. These members are commonly designed as "representatives." This neutral term is generally used in order to avoid that, on the one hand, the people carrying the designation feel that their status is elevated and that they have greater say in decision- making, and on the other hand, avoid that other members feel that they are not responsible since the President and Secretary are in charge.

The representatives of the village *Sanghas* work as the group's activators, helping in catalyzing discussion and action inside the community. The activities of several *Sanghas* are coordinated by a facilitator, who is a local woman trained by CCD. The relations between the members are informal and based on friendly terms. Coordination is done by reciprocal adaptation and informal communication. This reinforces the links of solidarity between the members.

The presence of a strong, dynamic leader has been identified as the most significant factor for the successful functioning and sustainability of a *Sanghas*. Her role in the *Sanghas* involves such tasks as providing feedback, mentoring, motivating assigning roles and tasks appropriately and coordinating the *Sanghas* activities. Usually a woman with some previous experience or competence to discharge the various functional responsibilities of *Sanghas* is selected as the leader. The leadership training imparted to the selected members enables them to discharge their duties with ease. The enthusiasm of several leaders, despite the fact that the post is not remunerative, has been several times observed during the field visits. Though some find it to be a burden, a large proportion of the present leaders seem to have understood their role as an opportunity for selfless service to their community.

A distinction could be made between *operational* leadership and *facilitating* leadership (Kozlowski et al. 1996). The representatives of the *Sanghas* provide a facilitating form of leadership, *"which is characterized by a relationship of trust and respect, in which the leader would not impose a decision on the group"* (Kozlowski et al. 1996). The role of the leader in the *Sangha* involves such tasks as providing feedback, mentoring, motivating, assigning roles and responsibilities appropriately, and coordinating.

This form of leadership impacts the structure of the *Sangha* and the ways it functions.

The *Sanghas* decisions are taken during group meetings by consensus among the members and representatives. These include decisions regarding the following issues:

- Minimum level of attendance for members
- Framing group and member responsibilities for various activities
- Framing the mode of conduct of meetings
- Deciding procedures for amendments to the rules and regulations
- Setting quorum requirements for decision making

Almost the majority of the members, irrespective of groups, remarked that good leadership, co-operation among members, and transparency in decision-making are essential for the smooth functioning and sustainability of the group. However, members felt that the role of the group leader is among one of the foremost factors responsible for a group's success or failure. The group leader is usually chosen from among the group members through a formal selection process; she has to be literate to be able to keep records and maintain accounts. The interviews show that in almost every case, however, the group leader is practically the only executive and decision-maker. Only in rare cases is she helped by the assistant leader. This goes against the grain of network and trust building through cooperative actions. Theoretically, there is no division of responsibility within the group, but often decision-making is concentrated due to the inherent social and cultural inequalities of the society that these women represent.

Two other groups collapsed due to a lack of trust, as the leader did not reveal the details of the account book to other members, making others feel that she was trying to cheat. In yet another case, the leader keeping the records of income and expenditure behaved in such secretive ways that misunderstanding with regard to loan repayments eventually splintered the group. In many cases, the team leader has received little more education than other group members, in turn, creating problems for the group. Conversely, sometimes the husband of the team leader becomes the virtual leader of the group.

Overdependence on leaders is found among members of some *Sanghas*. This system of spoonfeeding cannot be considered a positive sign; a strategy of gradual and slow withdrawal of the helping hand of the leader seems to be the ideal mechanism for making the groups self-reliant.

An important issue to be stressed upon is the fact that very little efforts are made to develop a second line of leadership to take up the leadership role. Interviews with the members of the *Sanghas* show that in several of these grass-roots organizations, a few women were keeping a prominent position from year to year. Although the bylaw of GMCL states that the leaders are to be elected afresh once in 2 years, in the majority of the groups studied, the same leaders are found to have been in office since their inception. The CCD field coordinator remarked that, *"this is due to the absence of educated persons or persons with ability to run the group."* A trend seems to have emerged from the educated and the 'better off' leaders dominating the groups, who were getting re-elected again and again. This is explicable with illiteracy or the educational backwardness of the group members. Lack of enthusiasm to partake in group activities and complacency in continuing with the traditional role of the housewife among

Table 4.1 Details on medicinal plants gatherers/ cultivators

Districts	7
Dindugal	
Trichy	
Virudhanagar	
Ramanad	
Sivagangai	
Adurai	
Theni	
Villages	66
Total groups	72
Gatherers groups	58
Members	1,382
Cultivator groups	14
Members	182
Shares at GMCL	Rs 500.000

the members represent other reasons. In some cases, resistance has emerged among members of the families or the community, in the case mainly of the *scheduled tribe* of the *Rettiyar,* to allow the women to attend meetings outside the ward or the locality.

The leaders who were re-elected repeatedly seemed to have been 'empowered' and 'benefited' the most. Though not undesirable, confinement of empowerment to themselves alone gives them the opportunity to dominate others in the group. Unless the group leaders educate the entire team to manage the group and maintain accounts and other records of the group it may lead to lopsided empowerment and not empowerment in the full sense. Non-availability of incentives to group leaders has led to their losing interest and the gradual decline in the efficiency of functioning of even the successful groups. The provision of some monetary incentive could be important as leadership role involves additional workload.

Thus, one of the strengths of the model is that the *Sanghas* have been formed with the aim to regroup members of the community who have the same socio-economic and caste background. The stakeholders are generally landless laborers or small farmers (the average size of the plots is between 2 and 5 acres). In designing the *Sanghas*, a differentiation has been done between farmers and gatherers, who have been regrouped in different *Sanghas*. This homogeneity has helped in minimizing conflicts and discriminatory practices, and in enhancing the social capital inside these local institutions. This has positive effects in the strengthening of the sense of community and favors the participation of the members of the community to GMCL activity (Table 4.1).

Although the collection and transformation of medicinal plants remains one of the main activities of the *Sanghas*, the economic functions taken up by the *Sanghas*' groups can be grouped into several categories, which can be performed with minimum capital investment, and which aim to increment the revenues of the women. The functions include services such as agro-processing (21%), household manufacturing,

such as the making of incense sticks, flower vases, cotton and woollen garments (9%), artisanal/traditional crafts, such as leather work, bamboo work, jute bags, pottery (21%), fisheries, and cattle or livestock rearing/pasturing (15%), and mixed activities involving more than one function by a single group (22%).

However, some respondents observed that the group often could not decide on a particular function. In most cases, the field workers of the CCD were required to resolve disputes over choosing the function of the group. In microcredit and other successful group approach stories, we find that such key agents have often played a significant role in preparing the tasks, helping women learn a new job, and to cope with various local cultural factors (for example, Beaumont et al. 1992). Power and control dynamics exercised by external members, in some cases, continue to play important roles in the survival of the groups. Younger women in groups were involved in fewer structured activities, such as household manufacturing, than older women. Short-term events and actions were popular but longer activities, such as learning crafts that are helpful for ongoing learning of transferable skills, were often seen as tedious and not worthwhile. In addition, the functioning groups were limited by insufficient capital, which affects their ability to market their products.

The group activities may also not appear to be sufficient to spur rural women into action.

Four members of the village organization, mainly middle-aged women, highlight that the participation in the *Sanghas*, and the social pressure created sometimes by its members, could also prevent them from moving into directions they wish to move. One of these women interviewed affirmed: *"My husband and I are mainly working as labourers for the local landowner. We have also a plot of 2 acres which we cultivate. I was not interested in taking part in the Sangha many women I am acquainted to are involved. When I told them I was not willing to be involved, they became quite hostile and unfriendly. At the end I decided to become a member not to deceive them and to be accepted by them."* This aspect emphasises how the establishment of these community networks in some cases create undesired external influences in the lives of the members of these village organizations.

4.4.2 GMCL and the CCD

As has been outlined above, GMCL plays the role of a marketing/commercial entity. Its main functions are liasing, selling the raw material, negotiating the commercial conditions with pharmaceutical sector, and expanding the market share at urban level for the final product.

The *Sanghas* regroups several gatherers, or farmers, and have the function of coordinating their activities (collection, harvesting, cleaning, drying, weighting etc.). As a farmer association, the *Sanghas* form a privileged place for information and knowledge sharing, and for the strengthening of social linkages among the members (Haubert 1997).

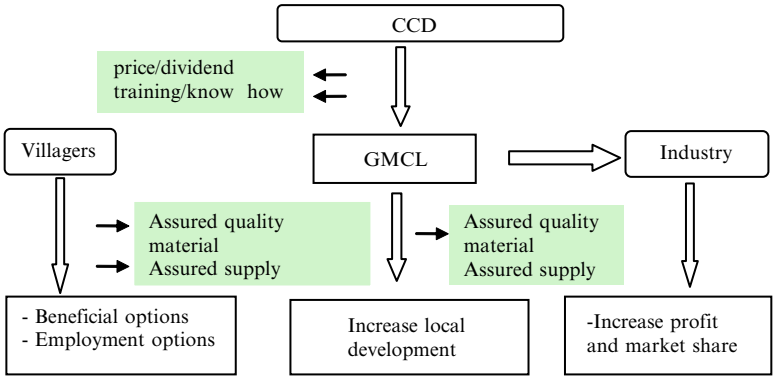

Fig. 4.2 The main actors in GMCL model

Another role played by the *Sanghas*, as a farmer association, is to regulate the relationships internal to the concerned groups (Haubert 1997).

The role of the **CCD** is the one of facilitator and action catalyst. The CCD promotes *Sanghas* in areas suitable for collection and cultivation, and gives managerial and administrative assistance, and training to *Sanghas* members.

The facilitator has been defined by as *"one who contributes structure and process to interactions so groups are able to function effectively and make effective decisions"*

In the case of the CCD, the role of facilitator is complex and involves several dimensions:

- *Organizational* dimension (facilitation in *Sanghas* constitution and operation coordination).
- *Communication* dimension (facilitation in the flux of information between the different levels of the organization).
- *Capacity building* dimension (facilitating the acquisition of knowledge and know-how and spread of information inside the *Sanghas*).

Several authors have emphasized the importance of the facilitator (Schwartz 1994; Carpenter and Kennedy 1988). As we will see in more detail later, these functions play an important role in enhancing the performance of the organization. In evaluating the contribution of the CCD to the GMCL model, these different dimensions need to be considered (Fig. 4.2).

4.4.2.1 Interaction Mechanisms Between the Different Sub-entities of the Organization

The interaction between the upper (GMCL) and the lower (*Sanghas*) strata of the organization is ensured by the presence of the chief coordinator and sub-field coordinators of the CCD. These latter interact with the representatives of the *Sanghas*.

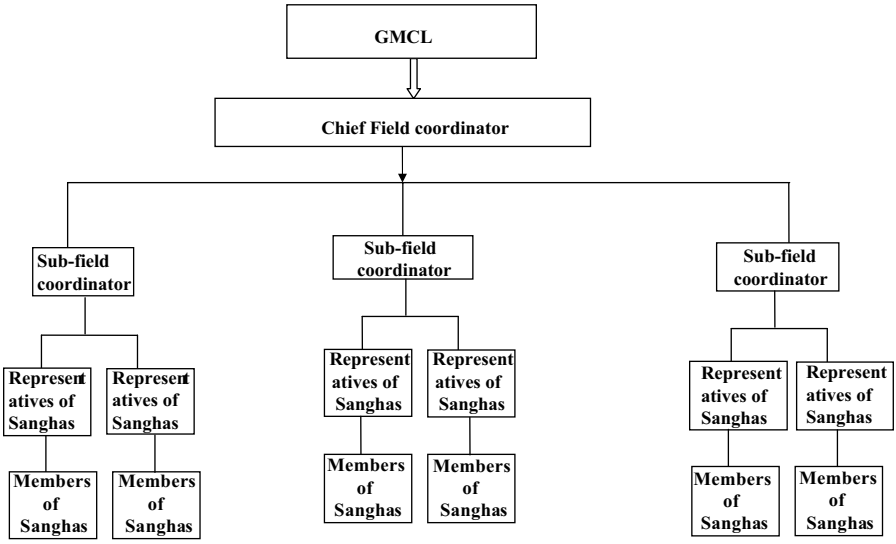

Fig. 4.3 The coordination process between the upper and lower strata in GMCL

Regular meeting are organized between sub-field coordinators and the *Sanghas* representatives.

The primary functions of field coordinators are tuned to the needs of *Sanghas* by way of providing information, support, and guidance when required, and to act as a link between village level activities and the upper strata of the organization.

The fieldworkers of the CCD liaise regularly with the villagers. Links are maintained between *Sanghas* and GMCL through an annual meeting, where all the *Sanghas* are invited to participate in the general assembly. During this assembly, the results of the past year and the plans for the forthcoming year are discussed. Emphasis is given to the difficulties and challenges faced during the annual activity by the *Sanghas* and solutions are formulated on a collective basis. This contributes to filling the informational gap, and also to maintaining the sense of ownership and participation alive among the villagers (Fig. 4.3).

Menard (1997) stresses the importance of the level of communication existing within the organization to support the participation, and consequently, the internal democracy. When information is spread during such public meetings within the village, the risks of marginalization of some groups decrease as each member of the *Sangha* 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 are the results."*

Up until the present, there is no village organization that liaises directly with GMCL.

This constitutes probably a weak point of the structure. The existence of a leasing organization would allow an increase in the interaction between the upper and the lower strata of GMCL and an improved communication and diffusion of information between the different stakeholders.

In the near future, 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. This federation is named the *Medicinal Plants Collectors and Cultivators Federation* (*MSMSSK*). The MSMSSK would promote coordinated action in the local herbal enterprise industry, in order to lobby for improved practices. Towards the same the Federation would:

1. Orient gatherers towards good collection practices and benefits of better quality and higher prices.
2. Orient cultivators towards Good Agricultural Practices, such as intercropping and organic inputs.
3. Favor the dialogue amongst stakeholders to enhance the cooperation.
4. Orient stakeholders on emerging industrial trends.

Currently, this role is partly played by the 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 the different stakeholders, are particularly important in enhancing the chances of success for an enterprise such as GMCL, active in the herbal sector. We can notice how 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. In this sense, we can affirm that GMCL could represent an example of *reflexive organization* (Robbins 2001).

4.4.2.2 Lack of Support from the External Institutions and Lack of Recognition of Members' Peculiarities

Regarding the *external factors* that can constitute a challenge for the success of the group approach in gender entrepreneurship, the women interviewed often emphasised the presence of gender-specific difficulties at different levels, such as political intervention or lack of gender sensitivity among *panchayat* members at the community level, and active discouragement from male members at the family level. The control of women's involvement in the public sphere is often strongest at the family level; husbands prevent women from going out of the home, using domestic quarrels, violence and other forms of intimidating behaviour, as well as trying to spend women's savings so that their payments in group formation become irregular.

The specific social and cultural contexts of women's lives need to be taken into consideration. It is clear that rural women in the villages under study are from diverse backgrounds; they have different levels of allegiance to networking, different household situations, different levels of wealth and status, and have different needs and interests.

As long as these differences are not recognised, it will remain difficult to propagate a truly successful group approach in gender entrepreneurship.

The points raised by our participants are indeed significant; if the objective is to build entrepreneurship among women, then the multiplicity of ways a person operates must be recognised. Individual initiative is too often considered to be eligible for assistance, as the formation of a group has now become the most important requirement for the local NGOs. The example of Amita is pertinent here. After saving up some capital by working in the fields for a few years, she sought a matching loan from the CCD, but was unsuccessful, as the programme officers maintained that their NGO mostly recognised groups and not individuals. In ignoring the aspirations and enterprise of individual women, such development schemes often defeat the very purpose of new entrepreneurial identities for women. Furthermore, the idea behind the shift from assistance to credit is the assumption that such assistance schemes do not work in low-income countries. Such universalising principles deny localities and communities their specific characteristics and needs. The woman as an individual in rural society must be viewed as a free actor, making her own decisions. This implies that the collectivity often envisioned by development agencies does not leave space for the individual's agency, as a significant factor in determining women's efforts.

The individual is an important factor in entrepreneurship and those with a high need for achievement become successful entrepreneurs. Individuals need to be motivated and this is not usually encouraged in rural women. From her childhood, an Indian woman is brought up to believe that her place is in the home, especially in middle-level farming families found in rural Tamil Nadu. Consequently, women often lack the skills and motivation needed to take up non-traditional economic activities. Indeed, women who step out of this mould need to be identified as leaders who are setting examples for other women. As we saw, our participants felt that the local development agencies neglected to play a supportive and encouraging role.

Given the complex socio-cultural environment in rural Tamil Nadu, the development schemes for women should address specific contextual needs and requirements, rather than act as restrictive instruments. They should also provide financial and commercial support systems, research and training institutions, and extension and consultancy services that are yet to reach rural women adequately and to address their risk factor.

4.4.3 The GMCL Objectives

After having analysed the main characteristics of GMCL structure, we will proceed by examining the *organizational objectives* of the company.

The analysis of the organisational objectives is relevant, as they can help in understanding the peculiarity of this business model. Through their analysis, we could also evaluate up to which point the culture and the values of this enterprise are in harmony with those of the local communities and are well suited to their needs and priorities.

The culture of an organization plays a fundamental role in the internal coherence of the organization itself. The culture of organization corresponds to *"the structure of the basic values that a group developed, while learning how to overcome the problems of external adaptation or internal integration"* (Menard 1997).

The culture of an organization aims at homogenizing the diversity of motivations that can be found in the organizations, by the establishment of an effective communication system between the participants.

In analysing the organizational objectives of GMCL, we will make reference to the concept of *cultural strength* of an organization defined by the extent to which organisational members share *core values*, that is to say values that intrinsically characterise the organisation (Deal and Kennedy 1982).

Emphasizes how robust designs of member organizations focus clearly on purpose which are central to their members rather than of interest to external agents. Dissonance between why a company is promoted and the purposes important to its members has been considered to be a common reason for its failure.

In the design of a company, one of most important elements to be kept into consideration is its *core purpose*: this core purpose should be attuned to what members expect.

The general objectives of GMCL are:

"To promote the conservation, cultivation, and sustainable forest/wild collection of medicinal plants, through persons engaged in ***generating income, employment and health benefits for village communities.****"*

In this statement, it is possible to observe how the generation of incomes and employment and the consequent improvement of local communities livelihoods is the main objective of this enterprise.

The fact that the business objective (making profits) is subordinated to the social one is evident in the pay/back politic followed by GMCL: the company pays 70% of the realized sale price to the primary producers. This margin is clearly high, if compared to other companies operating in the same sector. The fact that GMCL has decided to select, as its members, the marginal farmers shows that the company finds *sa raison d'être* in the socio-economic improvement of local communities. Targeting big farmers would have allowed the company to increase its bulk production, and therefore, its profits.

The adherence of the purposes of the company to the needs of GMCL members is also confirmed in the analysis of the **objects incidental or ancillary to the attainment of the main objects:**

- *To encourage friendly feeling and unanimity among the medicinal plants farmers/collectors on all subjects connected with the common good of medicinal plants farming/collection*;
- *To secure organized action on all or any of the matters relating to medicinal plants farming/collection*;
- *To bring about a greater sense of awareness among the medicinal plant farmers/collectors about the recent developments, trends and innovations pertaining to the industry*;
- *To bridge the communication gap that exists among medicinal plant farmers/collectors which has led to exploitation of the medicinal plant farmers/collectors in rural areas*;
- *To form a strong and united body that will identify the general difficulties and problems faced by the medicinal plant farmers/collectors and attempt to solve their problems in the most satisfactory manner*;

In characterizing the organizations, one can make the following distinctions according to their function (Krackhardt 1995):

- *Economic* function (production and commercialization of products)
- *Social* function (education and capacity building enhancement)
- *Representative* function (defense of group interests, increase of awareness)
- *Coordination* function (liaising among different actors)
- *Information* function (acquisition and share of information)

In the analysis of GMCL objectives, we can observe how all these functions are present.

It is evident in how GMCL aims to link at the same time the economic with the social concern.

The reinforcement of the sense of community and the increase of their awareness (*"To encourage friendly feeling and unanimity... with the common good…."*, " *To form a strong and united body..."*) through the education, acquisition, and share of information allow to create a platform of dialogue and cooperation among the farmers/collectors members of the *Sanghas*. In this way, the communitarian dimension of GMCL is rightly emphasized (indeed, GMCL is a community-based enterprise).

The purpose that GMCL serves is not merely relevant to members but central to them. GMCL could therefore be defined as a "member-central" company, that is to say a company whose objective is central to its members' priorities.

We have analyzed GMCL structure and its functioning mechanisms, as well as the organization's objectives. We shall now verify how effective the former two are in meeting with the latter.

From the analysis of the GMCL's objectives, it results that the company aims to:

– Strengthen the sense of ownership at the grass-root level.
– Favor the participation of the community.
– Reinforce the sense of community.

To determine whether these structures and functioning mechanisms of the company are instrumental to achieve the aforementioned objectives, we will analyze the structure of the *Sanghas* and the governance system of GMCL.

The achievement of these objectives is not always easy. Various problems that have led to the closure of the SHGs can be grouped into seven categories: production and technology, organisation, raw material, infrastructure, finance and capital flow, marketing, and other problems. However, as we met members of failed groups, it became apparent that the failure was due more to the lack of coordination and communication between group members. Significant issues that came up during the course of our individual conversations and group discussions are summarised below.

Important questions in understanding the dynamics of failed groups are: how does a group come together and on what basis? How do the local social, economic, political, and cultural inequalities continue to persist in a group? The interviews showed that the hierarchy of caste location often leads to lack of participation. Five of the women interviewed, especially the poorer ones, have emphasized how low caste and social status may inhibit entry into group entrepreneurial occupations,

reducing the range of activities open to poor women, and limiting their economic activities. This socio-cultural constraint prevents an increase in the participation of the women in GMCL activity, and limits their empowerment. As among these village communities, the herb gathering activity is associated with a low caste and tribal background; therefore, it represents a social stigma. In the village of Thimmapuram, only four villagers are engaged in collecting herbs activity. Although the CCD informed the villagers of the possible economic returns of this activity, none of them have shown any interest in taking part in the collection of herbs.

Although the members of the CCD affirm that one of the strengths of the model is that the *Sanghas* have been formed with the aim to regroup members of the community who have the same socio-economic and caste background, remarks have been made by 1/3 of the women interviewed on the difficulties of interaction between members across their caste and class divides. Such ruptures are not uncommon; in several cases, members spoke about missing a 'real' cohesiveness in the group, leading to its fracture. Emblematic is the case of Kavitta, a middle-aged, ex-member of a *Sangha* who affirmed: *"I attended some meetings of the Sangha but it was quite frustrating. My suggestions have never been taken into consideration. There was a group of women who are quite well-off and were friends of the president of the Sangha, who is their relative and whose ideas were always followed. They were quite influential in the group and my sister and I, who come from a poorer family, had to obey then. We decided to quit the group and they never asked us an explanation of our decision."*

In the village of Kallupathy, the *Sanghas* failed to enable members to realise their potential benefits. The reasons identified for the failure were the presence of misconceptions about *Sanghas* goals, both among the team and the members, and a lack of clarity about the concept of the *Sangha*. The main lessons drawn from this case are the need for creating *Sanghas* that are based on a clear assessment of the needs of different groups of women (based on the criteria of age and socioeconomic conditions), ensuring clear understanding of the concept of *Sanghas* among team members involved in promoting *Sanghas*, and enhancing the relevance of *Sanghas* to their members by enabling them to meet effectively their requirements, in terms of the amount of time necessary to carry out the shared activities and personal responsibilities.

The question of religious differences among rural women was another factor leading to group collapse. A woman *panchayat* member noted in a group discussion that she found it difficult to involve women from Muslim families in activities outside the home because of their lack of control over finances, movement, or time management. This was somewhat complicated by Nasreen, a Muslim girl running a group. Nasreen noted that although Muslim mothers following the *purdah*[12] are eager for their daughters to acquire some education, investments in education and

[12] *Purdah* or *Pardaa* is the practice of preventing women from being seen by men. This takes two forms: physical segregation of the sexes, and the requirement for women to cover their bodies and conceal their form. Purdah exists in various forms in the Islamic world and among Hindu women in parts of India.

health have little expanded their choices in labour markets. Social workers of the local NGOs, such as the CCD, play a significant role in the extension of literacy among home-bound Muslim women, but they are still reticent to bring the women into economic networks, as they fear the creation of social conflicts within the villages' social groups. As a result, Muslim women are conspicuously absent from the *Sanghas* and other village organizations. In a context where women's autonomy and physical mobility are generally restricted by gender inequalities within the family, differences in economic roles and power, son preference, and oppressive cultural traditions, this lack of encouragement further penalizes the women's participation in public forum.

4.4.4 Governance Structure

It is well known that an effective coordination of the actions of the individuals and subgroups in the organisation, making sure that they are all focusing their efforts on carrying out a feasible plan of action, will promote the organisation's goals (Johannisson 1996).

The questions we would like to answer are the following:

– How is the governance structure in GMCL designed?
– To whom it is accountable?

4.4.4.1 Electoral System and Direct Representation at Grass-root Level

Emphasises how the design shapes the effectiveness central to organizational performance. In explaining the design of GMCL, we will refer to a complex of three distinct entities and the inter-relationships between them (Fig. 4.4):

- *Member-users* (MU), who are the owners of the company.
- *Governance structure* (GS)
- *Operating system* (OS)

In GMCL, the member-users are represented by the *Sanghas*; the GS by the board of Directors and the OS by the management.

This complex is to be viewed against the shared purpose for which members form the company. When this complex is well designed, the organization has the central tendency of pursuing the goals of its owners.

A key element that needs to be taken into account is the difference between the concept of "insiders" and "outsiders." The group who is considered to be "insider" controls the OS and is able of controlling effectively its own interests. In well designed organizations, the owners, or the insiders, ensure, by (choosing) co-opting the GS in the 'inside,' that the OS remains subservient to their purpose in its dealing with 'outsiders'; their performance thus reflects the goals of the owners as articulated by their GS.

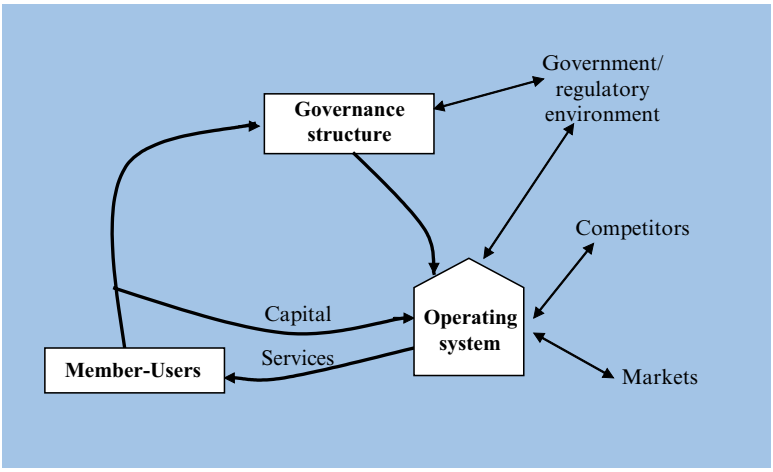

Fig. 4.4 The model of the idealized cooperative

The function of a company's board is to aggregate in the organizational objective functions, and hold the operating system (OS) *accountable* for pursuing this objective function. Patronage cohesiveness indicates the propensity of an organization's **board of directors** to cohere around issues critical to members' business transactions with the company rather than being factious of being cohesive around other issues/concerns, such as their private or venal interests.

The GS is the instrument of operationalizing 'member control' over the OS. Effective member control generally takes the form of demands made and support provided in terms of a commonly shared understanding of desired performance; similarly, support unlinked to performance goals tends to result in wasted resources. Exercising effective control requires that the board members have a good working understanding of the OS and is functioning, and some capacity to analyze and use information. Most farmer cooperatives with elected boards lack this capacity. This lack, however, is not the central reason for poor governance. Problems of poor governance arise primarily because cooperatives with elected boards feel neither motivated nor pressurized by the memberships to promote the aggregated priorities of members. The GS, even when elected by members, is the weak link in the design of cooperatives as member-owned business organizations.

One of the characteristics of GMCL model is that there is a **direct representation** of local gatherers in the company's Board of Directors. The board of the company, which decides the company policy and its periodic reviews, is directly elected within the *Sanghas*. As a result of the fact that the villager's representatives are included in the board of directors and directly elected at grass-root level, the owners of the company (*Sanghas* members) directly control the GS in GMCL.

In GMCL, the structuring of the relationship between the board and the membership, which is created through the design of **direct electoral system**, determines the patronage cohesiveness of governance. This enhances the ability of the board to

transmit the patronage concerns of members to the OS, ensuring that the agenda of local communities receives constant consideration by the management.

The direct control from the member users at the grass root level to the governance structure is very important, in order to assure that the member interests are duly taken into account. This enhances the participation at the grass root level and democratic processes inside the organisation.

4.4.4.2 Shared Ownership

Another element that needs to be emphasized in the structure of the GMCL model is that the cultivators and gatherers of medicinal plants represent the main **shareholders** of the company. On the day of the constitution of the company, the subscribed shares were Rs 5.20 lacs and the majority (Rs 4.95 lacs) was held by the *Sanghas*. The price that the villagers paid for the shares (Rs 10) has been almost nominal. A minimum purchase of Rs 50 has been requested to every Sangha member who wished to become a shareholder.

In the GMCL model, the quantity of shares held by every member is not fixed among the members, as it happens in a cooperative society. This number of shares is proportional to the quantity of herbs supplied by each farmer.

It is important to note that not all the *Sanghas* that supply raw material to GMCL are shareholders of the company. Indeed, the number of *Sanghas* that are shareholders of the company is 30 out of 58. This number could possibly increase in the next future. At present, one needs to ponder upon the possible reasons of this phenomenon. The fact that there are two different kind of farmers (those who are shareholders and those you are just suppliers) could undermine the real representation of GMCL at the grassroots level and possibly increase the social differences inside the communities.

The fact that the members of the *Sanghas* are shareholders of the company does not only represent a positive financial aspect for the villages, who can receive dividends, but has contributed to increase their **sense of ownership** towards the company (Learned 1992; Larson and Starr 1993). The latter element is particularly important, as it can enhance the **participation** of local communities in the GMCL initiatives and foster them in the future. Building effective and innovative forms of community involvement in decision-making is one of the major challenges of any form of local development (Katz 1993; Kilkenny et al. 1999; Deshingkar et al. 2005). As in any development project, the lack of grassroots participation can threaten the long run sustainability of the enterprise (World Bank 1996; Kurtz and Snowden 2006). Conversely, grassroots participation can be one of the strengths of a CBE, given its endogenous nature.

The villagers are aware of the meaning and implication of being shareholders of the company. In numerous cases, they have associated the shareholding of the company with a sense of pride. Being part of an initiative perceived as successful has increased their sense of identity and their empowerment as a community. Some villagers on the other hand have mainly associated the shareholding of the company with the right of receiving the dividends, limiting several dimensions associated with the ownership to a mere economic consideration.

4.4.5 GMCL Operational Functioning Mechanisms

We shall now analyze the process through which GMCL operates. This will allow us to gain a real picture of the way this community-based enterprise functions, in order to better understand the role of the CCD in the model.

As we have seen previously, the CCD is the liaison between GMCL and local communities. The role of the CCD is multifarious and involves several tasks. At first, the CCD involvement in GMCL activity implies the identification villagers who are interested and willing to take up medicinal plants cultivation and collection. These villages are targeted on the basis of their socio-economic condition. As the main objective of GMCL is to enhance the livelihood of rural poor, the selection of the beneficiaries will take this aspect into particular account. This phase of approaching and explaining to the villagers the advantages of taking part in GMCL activity is sometimes long and not always easy. According to some field-coordinators, sometimes several months and frequent visits are necessary in order to gain the trust of the villagers and foster their interest. Most times, the villagers associate medicinal herb sale with the concept of exploitation and low income, due to past negative experiences with traders. In the general opinion of villagers, the sale of herbs is associated with price fluctuations and therefore, instability in the income.

Before the constitution of a *Sangha*, the field coordinator explains the conditions that are part of the agreement with GMCL. SOPs (Standard Operating Procedures) have been developed for *Sangha* formation, assessment, harvest and post harvest, till dispatch and collection of payment.

The *Sangha*, in adherence with GMCL principles, needs to:

- Make periodic assessments of cultivation and give feedback to the CCD for inputs required.
- Monitor their cultivation activities and prepare reports facilitated by the CCD team leader.
- Adhere to quality, quantity and other agreed standards.
- Maintain the instruments for measuring weight and moisture as required, arrange for appropriate storage.
- Make payments to its members after delivery of harvested produce.
- Keep systematic records of all goods, transactions and activity as per formats prescribed.

Once the villagers agree to be involved in GMCL, the *Sanghas* are established.

Initial training and guidance is given to the villagers in reference to the operational, administrative, and legal procedures involved with the formation and functioning of the Sangha. These procedures are varied and concern several aspects, such as soil analysis, sustainable cultivation, quality checking, costs of inputs, preparation of periodic reports, and time-activity and progress charts.

The CCD undertakes to arrange for supply of planting material, as per planned scheduled as well as monitor the *Sanghas*'s cultivation activities. Every Sangha, in turn, holds periodic assessment and review meetings with the CCD team leader to

discuss the legal (membership forms, share application and amount), administrative (accounts, documentation etc.) and technical issues (cultivation, harvest etc.) involved in the activity.

4.4.5.1 GMCL Process

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

The quantity produced or collected by every member is decided upon on a collective basis inside the Sangha. This aspect seems to be a sensitive issue, as it can possibly lead to conflicts inside the Sangha. Indeed, generally, the villagers have the objective to increase collection or production of herbs: a larger supply corresponds to a lager income. This can sometimes clash with the interests of other members of the Sangha, who also wish to increase their supply to GMCL.

Conflicts resolution mechanisms are established, and the mediation role of the CCD field coordinators is requested in case of disputes.

When GMCL gets a firm order from a buyer, the buyer offers to purchase 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 particularly significant as the market of herbal sector is characterized by price fluctuations and instability, due to the seasonality of the supply. The villagers can, therefore, benefit from an assurance that the quantity that they procure will be purchased at an agreed upon price.

The *Sanghas* send the samples of the materials to be collected by the buyer through the GMCL. When the buyer accepts the samples, GMCL places orders with the *Sanghas,* specifying quantity, quality, packing style required, and transportation modalities.

The members the *Sanghas* collect the medicinal herbs and undertake the initial processing (cleaning, drying etc.). The raw material is weighted and the record of the quantity supplied by every member is kept by the Sangha representatives.

The purchased materials are stored in temporary go-down until sufficient volume is obtained, and then shifted to the central go-down or to the market as per the direction of GMCL. The groups take responsibility for transporting the produce. 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 taken into account.

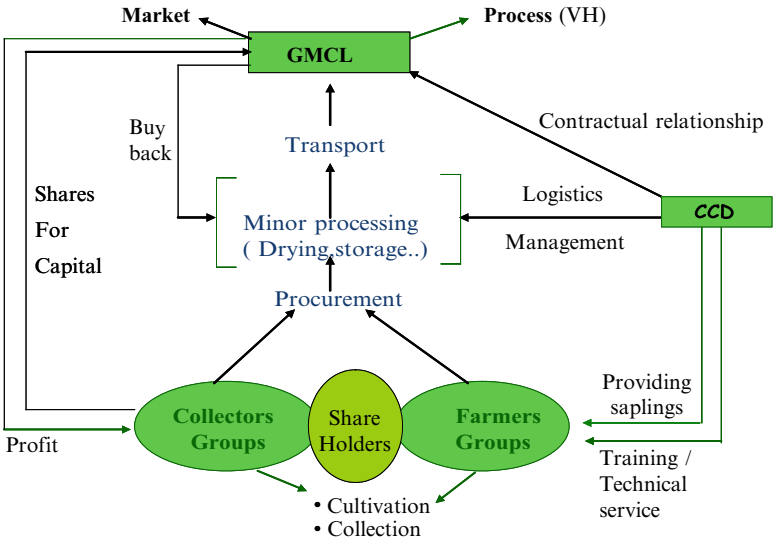

Fig. 4.5 Conceptual diagram of GMCL operations

The groups' office bearers do the required quality checks (moisture level, presence of foreign bodies, etc.), then weigh and pay the actual value to the Sangha. The elected members of the Sangha, who obtained the requisite training from the CCD, maintain the accounts of the transactions.

The procedure for the sharing of benefits issued by the transaction with GMCL is considered by the members of the *Sanghas* to be smooth and transparent. Conflicts are rare. *"The advantages of the GMCL operations are that the villagers can sell directly from their village at pre-announced prices and the weighing is totally transparent,"* affirms G. Raju, former managing director of GMCL.

GMCL realizes the negotiated price from the buyers. 70% of the negotiated price is given as the full price of the material purchased, after deductions of any advances made towards inputs purchase to the villagers. 10% of the negotiated price is retained by the company for its administrative expenses while another 10% is given to the facilitating NGOs for their support services provided for social mobilization of the members, training to the members and internal logistics. The remaining 10% of the negotiated price is converted into shares in proportion to each group's supply. This again, in turn, is allocated to individual members in proportion to their contribution. These dividends are often reinvested by the villagers in the purchase of more shares. In order to increase the stakeholders' interest, a part of sales profits is converted into share capital. The groups disburse the money to the members in proportion to their contributions and the quantity produced or gathered. Elected members of the group maintain the accounts of the transactions (Fig. 4.5).

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Chapter 5
Ethnomedicine, Capacity Development, and Innovation System Through GMCL

Abstract Until recently, local innovation capacity and management practices and institutions developed by local communities through their traditional knowledge have received little attention. This chapter illustrates not only the results of scientific research into innovation systems but also on how local communities, through their participation with GMCL in a network of supportive partnerships, can draw knowledge for others and combine this with their own and generate innovations in their local practices. In this chapter we refer to the concept of "capacity" as capacity to use the traditional ethnomedicine knowledge in a way that it enhances socio-economic development of local communities. We define this new concept of capacity with the term "ethnomedicine capacity". The innovation that we shall describe in the chapter consists in the capacity of local stakeholders to use the traditional knowledge, and in particular ethnomedicine, in a way to boost income generation, local health practices and environmental conservation. We shall define the innovative processes through which this capacity is created and reinforced as a "capacity development" process.

Keywords Ethnomedicine • Innovation systems • Medicinal plants • Innovation capacity • Traditional knowledge

This chapter aims to establish an analysis of GMCL within an *innovation system* by developing the concept of *innovation capacity*. GMCL is an attempt to embed the traditional knowledge in ethnomedicine in a broader set of relationships with the aim to link advances and applications in bioprospecting to rural development and social outcomes for local communities. In fact, the concepts of partnership, networks of organization, and the cross-linkages, are especially a distinctive element of the GMCL case study.

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Many local innovations are not of a technical nature, but rather are socio-economic and institutional innovations, such as new ways of gaining access to resource-use rights or new ways of organising marketing activities. Innovation is now often defined as the development, adaptation, or imitation, and the subsequent adoption of technologies, or the application of knowledge that is new within a specific context. It is seen as an interactive process, in which different shakeholders, in continuous interaction with each other, and supported by other institutions and organizations, innovate and bring new processes into social and economic use.

Although local innovation has always been happening, it has seldom been recognised, even by people who have been documenting indigenous knowledge (IK) for decades. There is a widespread tendency to regard IK as a treasure chest of ancient jewels that must be stored well and documented for posterity – before it is lost – rather than seeing the dynamics in the knowledge of local people.

This chapter reports not on the results of scientific research into innovation systems, but rather on how actors within innovation systems are trying to find *practical ways and means* of enhancing these systems. This process includes study and analysis of the experiences by the people directly involved, so that they have a better understanding about how they can interact better within an innovation system.

There is a growing recognition that innovation is not a linear process from formal science to farmer adopters. The notions that innovation is a social process involving a multitude, of different actors and that innovation processes can be enhanced by creating more possibilities for actors to interact are becoming more widely accepted. If they are to interact effectively, many social and psychological processes are involved and many personal and institutional changes need to be made.

It is also important to indicate that the concept of innovation is used in this definition in the broadest possible sense (Spielman 2005), to include knowledge embodied in new understandings and perspectives of social and economic processes, and institutional and organizational innovations.

The concept of innovation systems has become used increasingly in current development discourse as a kind of metaphor to indicate the need for a much wider perspective on relevant decision making procedures than have been the case in the past.[1] The concept of *innovation systems* (Clark 1990, 1995, 2002; Ekboir and Parellada 2002; Hall et al. 2001, 2002; Hall and Clark 1995; Spielman 2005) provides an alternative framework to look at innovation processes from a systemic perspective.

The innovation systems framework "opens the 'black box' of innovation" (Spielman 2005) to analyze the roles of different innovation agents, the types

[1] In the neoclassical economics tradition, innovation is understood to be induced by the relative scarcity (hence, price) of factors. It follows that there is a lineal input/output relationship between agricultural research, development of technology and its dissemination, and at the end, adoption by farmers leading to economic and social effects and impacts. This paradigm of lineal knowledge diffusion has been criticized for its failure to understand the source, nature, and dynamics of most innovations processes, in particular, in the context of developing countries, as well as for failing to pay sufficient attention to the distributional or equity issues related to innovation.

and quality of the interactions between them, and the formal and informal institutions that structure the innovation processes. An *innovation system* is comprised of the agents involved in the innovation process, their actions and interactions, and the formal and informal rules that regulate this system (Ekboir and Parellada 2002, p. 138).

Explicit in the innovation system concept is the notion that innovations are the product of networks of social and economic agents who interact with each other, and as a consequence of this interaction, create new ways to deal with social or economic processes. As Hall et al. (2001) argue, this concept highlights the critical importance for innovation of idiosyncratic, inter-personal and interorganizational relationships, and partnerships. 'Social capital,' that is, the ability to form relationships of cooperation, is a key ingredient of effective innovation systems.

Innovation agents are individuals or organizations, in the public or the private domain, who have the ability to cause change. In effective innovation networks, different partners need to bring resources and capabilities that are valuable to the rest and that contribute to the common goal; that is why closed networks of "poor people with poor people" are often not particularly effective in producing useful and sustainable innovations.

In this innovation systems framework, an *innovation* has been defined in different ways, each of which highlights specific aspects of interest to our discussion:

- Any new knowledge introduced into and utilized in an economic or social process (Spielman 2005).
- As a process in which knowledge is accumulated and applied by heterogeneous agents through complex interactions conditioned by social and economic institutions (Spielman 2005).
- The process of generating new knowledge and applying it productively (Hall et al. 2002).
- The ability to use knowledge creatively in response to market opportunities or other social needs (Ekboir and Parellada 2002).
- A social process [of knowledge creation and exchange] shaped by the institutional structures in which it is embedded (Oyelaran-Oyeyinka 2005).

Whatever the definition, it is agreed that important elements in an innovation process are: putting knowledge into use, whether it is new, or accumulated, or simply used in a creative manner, and the presence of diverse agents and complex interactions between them. Innovations are social constructs, and as such, they reflect and result from the interplay of different actors, often with conflicting interests and objectives, and certainly with different degrees of economic, social and political power.

While multi-stakeholder platforms or networks are important, the quality of the agents' interactions, and, in particular, of the social learning processes that occur during the innovation process, are of the essence (Edquist 2001). The learning process is the substance and what should attract our main interest and attention, while the multi-stakeholder platforms are a means to an end. Social learning processes are necessary for deeply rooted institutions and institutional failures, a main cause of poverty, to be changed (Edquist 2001).

A *pro-poor innovation system* could be defined as a multi-stakeholder social learning process, that generates and puts to use new knowledge, and which expands the capabilities and opportunities of the poor. It is important to highlight several elements in the above definition. First, a greater emphasis on the *process* than on the product (knowledge). If one emphasizes the output (new knowledge) as the principal causal factor of the expanded capabilities and opportunities of the poor, it could be argued that it is not always necessary for the poor to be directly engaged in the innovation process for it to be judged as being pro-poor, if the distributional outcomes are socially inclusive. It is the social process of learning, discovery, and utilization that is mainly responsible for the effective and sustainable (i.e., beyond the project) expansion of the capabilities and opportunities of the poor. Ma (2002) has proposed that it is cognition, the process of knowing, rather than knowledge *per se* that is truly important.

Some of the questions that should be addressed at this point are the following:

- How can local communities be supported to build on their social and cultural traditions and practices to create and adapt their knowledge?
- How can the local communities become the central focus of the innovation system based on their natural resources?
- How can their capacity to learn and innovate be recognized and facilitated to contribute to achieving local development?
- How can they build local capacity to facilitate continuous learning to sustain innovation?

Capacity, like sustainability, is an elusive concept. In the literature, it is described both as a process and an outcome, and as dynamic and multidimensional (Narayan-Parker 2000).

In our analysis, we will refer to the definition according to which, *"Capacity strengthening is an ongoing process by which people and systems, operating within dynamic contexts, enhance their abilities to develop and implement strategies in pursuit of their objectives for increased performance in a sustainable way"* (Lusthaus et al. 1999). This definition seems to be appropriate for the approach we aim to follow, as it emphasises the element of dynamism and sustainability of capacity-building.

In our analysis, we assume that the notion of "capacity" is centered upon the capacity to use the traditional knowledge as it relates to ethnomedicine, in a way that results in the boosting of local development in socio-economic terms.

We will define this capacity with the term *"ethnomedicine capacity."* The innovation that we shall describe consists, in this capacity, to use the TK in a way that enhances local development. We shall define the innovative processes through which this capacity is created and reinforced as a "capacity development" process. As we will se, this form of innovation, centred upon the ethnomedicine, involves several actors. These health traditions are dynamic, innovative, and evolving, and consist of various health practices based on local epistemologies and empirical experience.

The definitional framework adopted in our approach treats the TK as a dynamic and multidimensional reality, and allows a shift in perspective. The objective would not just be in how to access TK in an equitable way-issue that is widely discussed in reference to traditional knowledge at the moment, but in how to enhance the *community-capacity* that is linked to TK through a process of capacity-development.

Our analysis focus on the participation of community in the creation of knowledge through the process of relationship building, community planning, decision-making and action inside the local institutions. Our focus will be on the understanding of the process of community participation and interaction between the different partners involved through which this knowledge is generated.

As the level of our analysis will be mainly focussed on ethnomedicine capacity creation and diffusion at different levels and among different stakeholders, we have decided to adopt a double approach of *capacity development* analysis:

– *Organizational approach*
– *Participatory process approach at community level*

The *organizational approach* focuses on identifying the elements or components of capacity within an organization (Morris 2000; Senge et al. 1999; Easterby-Smith et al. 1999). As the concept of capacity development is in its nature multilevel, holistic, and interrelated, in which each system and part is linked to another, we will combine a "closed" and "open" system perspective. Capacity-development is seen as a dynamic process, whereby intricate networks of actors (individuals, communities/groups and organizations) seek to enhance their abilities to perform what they do, both by their own initiatives and through the support of outsiders.

Our analysis will focus, therefore, on the internal workings of the network at different levels to improve capacity, as well as the organization's relationship to influences from the external environment, as the organization is a part of a network.

The *participatory process approach,* at the community level, is inspired by the vision that sees development as people-centered and non-hierarchical. This approach believes that unless *capacity development* is a participatory, empowering partnership, for which those involved feel a high degree of ownership, intended results cannot be achieved (Fowler 1997). The goal to develop an institution should not result in the imposition of a foreign model, but instead, attempts should be made to identify and use local expertise, and develop a grassroots, domestic model (Mueller and Thomas 2001).

As our analysis will be carried out at different levels of ethnomedicine capacity among the different stakeholders, and aims to study the interrelations between them, it will assume a *network dimension*. Among individuals, networks of positive social relations are known as "social capital" (Coleman 1988; Pant 2000). The notion of social capital can be extended to relations among associated groups of more formal organizations, with each organization operating within the network. Such an infrastructure of relationship provides organizations with greater access to resources and helps structure relations among them (Peterson 1988).

The enhancement of ethnomedicine capacity happens in the framework of a network structure. This network is constituted by heterogeneous organizations, the first being the FRLHT (Foundation for the Revitalization of Local Health Traditions), a think-tank that is focused on education and has a technical expertise in botanics, and the second being the CCD (Covenant Centre for Development), a local Indian NGO that is mostly concerned with rural development.

We shall now examine the positions of the FRLHT and the CCD in the processs of creation and the diffusion of the capacity associated with traditional ethnomedicine that we have defined as *"ethnomedicine capacity."*

The Foundation for Revitalization of Local Health Traditions (FRLHT) is a non-governmental organisation, established in 1993 in Bangalore (Karnataka). The FRLHT seeks to revitalize Indian local health traditions through a range of field activities and research and extension programs.

The main areas of action are:

- Conservation of the natural resources used by traditional medicine system.
- Demonstration the contemporary relevance of the theory and practice of traditional medicine system.
- Revitalization the social processes (institutional, oral and commercial) for the transmission of traditional knowledge of healthcare and promotion of its wider use and application.

The FRLHT has carried out several botanical and ecological surveys with the aim of cataloguing the medicinal plant species in India. These studies have been alternated by conservation projects, following an action research approach typical of this organization. One of FRLHT's major projects has been to conserve species of medicinal plants in Indian forests, in conjunction with state governments and the participation of local communities.[2]

Another NGO that has played an important role has been the CCD (Covenant Centre for Development). The CCD is based in Madurai (Tamil Nadu), and was promoted in 1988 by a team of professionally trained social work students and teachers.

This NGO has gained considerable experience in mobilizing rural communities in the past 15 years, notably in the context of micro-credit with the creation of Self Help Groups (SHGs) and other village organizations. Working with women-led groups has given the CCD insights into the priorities and needs of local communities and has helped in the establishment of linkages of trust between the fieldworkers and these rural communities.

5.1 Processes Through Which Ethnomedicine Capacity is Generated

The "ethnomedicine capacity" is originated by the interactions between the scientists of the FRLHT, the members of the CCD and the villagers, in particular, the folkhealers. The ethnomedicine capacity consists in the ability to use it in a way

[2] This initiative has resulted in the setting up of a network of 55 *Medicinal Plant Conservation Areas* (MPCA) across different forest types and altitude zones in these five states of peninsular India. The most important purpose of this network of MPCAs is that it serves as the gene bank of medicinal plant resources of the region. The network of MPCAs captures the inter and intra specific medicinal plant diversity of peninsular India. The MPCAs capture around 2,000 medicinal plant species, which represent 50% of the medicinal plant diversity of the five states, and significantly includes over 75% of the RED Listed Species of these states. For all the MPCA sites, detailed floristic studies on medicinal plant diversity, including the threatened, traded, and endemic plants, have been undertaken.

that enhances local development. In this proposal, interviews carried out by the author have emphasized positive outcomes in economic and social terms, the first being related to increase in household income, and the second concerning the empowerment observed at personal and community level. In this chapter, we will focus our attention on the processes through which ethnomedicinal knowledge is created and diffused. The impact of the latter on local communities will not be analysed much in depth in this context. Our aim is to understand how the mechanisms of this capacity can be originated and diffused, and the ways in which it can be promoted.

This understanding is important, as it can give important insights into the mechanisms and processes through which the ethnomedicinal knowledge could be used to enhance the socio-economic development and health system of local communities.

An important moment in the creation of the "ethnomedicine capacity" consists of the interaction between the members of the FRLHT, the CCD and the folkhealers. This has taken place during several years, through several programs and field studies.

The approach followed by the FRLHT and the CCD involved *research* and *action,* and consisted of:

- Documentation, research and conservation of medicinal plants and herbs (knowledge)
- Dissemination and awareness among the villagers (consolidation and strengthening of traditional knowledge)

These studies have been instrumental in realizing the importance of venturing into the sector of medicinal plants, in order to enhance local livelihoods and health system through the constitution of a community-based enterprise, such GMCL. The majority of the FRLHT and CCD's documentation, study, and research work in the area of Medicinal Plants are broadly classified under the common projects of '*Medicinal Plants Conservation Programme*' and '*Validation of Local Health Traditions*.' With these projects began the collaboration of the CCD with the FRLHT in 1994. The FRLHT and CCD's involvement with documenting medicinal plants and related sectors began with recording the *naattu vaidhyar*'s (traditional folk healers) information, their health practices, remedies, and local species of medicinal plants used by them for preparing their cures. Local health traditions are mostly undocumented and oral in India. These oral, or folk medical traditions, are extremely diverse, since they are rooted in natural resources located in so many different ecosystems. According to the nomenclature database developed by the FRLHT, there are some 50,000 local names for the approximately 4,800 medicinal plants used in folk medicine.

It is important to underline that in India the orally transmitted "folk" systems practiced by village physicians and/or folk healers and tribal communities coexist with "scientific" (*Sasthreeya*) systems, such as that of Ayurveda, Sidha, Unani, and Amchi, which are based on organized, codified, and synthesized medical wisdom with strong theoretical and conceptual foundations and philosophical explanations (Pushpangadan 2002).

Local health traditions are not restricted to any social or economic class, and include both human and veterinary medicine. The custodians and carriers of these traditions are from various ethnic communities, including the tribes. They also include certain professionals, such as potters, goldsmiths, blacksmiths, barbers, and even wandering monks. Our interviews indicate that the largest numbers of traditional healers are women. They include people who practise home remedies, and also traditional birth attendants, who attend deliveries and advise local communities on pre- and post-natal care. Bone-setters are the second largest specialised group of local healers in India. It is estimated that traditional bonesetters handle 50–60% of sprains, dislocations and fractures in India. The third largest proportion of the folk healers, around 60,000, are the healers who treat the poisonous bites (Pushpangadan 2002).

Interestingly, it is observed that particular ethnic communities specialize in certain local health practices. For example, the Navidhars, or barber community of certain locations in Tamil Nadu, are experts in treating skin troubles. Similarly the Kurubas in Karnataka, and the Konars of Tamil Nadu, are shepherds or cattle-rearing communities and well versed in veterinary medicine.

Understanding people's perception of the local resources in local health practices has been essential for the FRLHT and CCD. This has provided the basis for an effective methodology to document and assess local health traditions, and for formulating effective strategies for the promotion of their use and conservation. The interaction with folkhealers and the other members of the communities is done through the organization of workshops and meetings organized in the villages (see photos 5.1 and 5.2). Such occasions helped build up a series of relationships between the scientists, the NGO's field officers, and the communities they are working with.

About 200 practitioners have been covered to document over 700 practices. Of these, about 55 were *Visha Vaidhyars* (poison healers), 31 were traditional birth attendants besides bonesetters, veterinarians, and general health practitioners. A total of 578 medicinal formulas have also been recorded in this documentation. In addition to this health and medicinal aspect, information related to their socio-economic and cultural aspects were also collected. Besides Health Practitioners, about 600 women in about 400 households from 60 villages were interviewed for recording the household remedies, traditional food recipes and regimen that they are familiar with and use. To encourage social recognition and promotion of grassroots unaided innovations and traditional knowledge, the FRLHT and CCD have also documented a total of 13,000 such practices of the knowledge contributors for the National Innovation Foundation (NIF), Ahmedabad. Through the FRLHT and CCD's involvement, innovations in the area of health and medicine also began to be recognized for the annual NIF awards and inclusion in the National Innovations registry.

The FRLHT has developed a methodology for the assessment of local health traditions, which combines the knowledge and experience from community members, folk healers, as well as practitioners of western biomedicine and other Indian systems of medicine – Ayurveda, Siddha and Unani.

Based on a thorough review of such published floras and checklists of plant species recorded in Karnataka and Tamil Nadu, along with the tagging of species, which have been recorded in medicinal use either in one of the classical traditional systems of medicine like Ayurveda, Siddha, Unani, or the folk systems, has resulted in a checklist of medicinal plants of Karnataka and Tamil Nadu States. The tagging of medicinal status has been carried out with the help of the FRLHT's computerized database on medicinal plants of India, which has been prepared through detailed referencing of more than 200 published sources. This list of medicinal plants has been further

processed to work out the synonymy linkages, and after such processing, the total number of botanical names currently stood at 1,577.

Subsequently, based on collection, compilation, and analysis of data recorded at the sampled sites, new species have been added to this list. These are the species recorded in local medicinal use at the sampled sites and already bearing medicinal tag as per FRLHT's database. Each one of these species is tagged with appropriate medical systems, recording their medical applications in the various systems, such as A for Ayurveda, F for Folk, and U for Unani, etc.

In order to finalize a list of native medicinal plants of Karnataka and Tamil Nadu, along with their distribution/presence in the zones of the project area, all such species that exist in these two states only in cultivated, planted, run wild, or naturalized state have been picked out and separated. The remaining medicinal plants that have been identified as native to Karnataka and Tamil Nadu are enlisted.

Value addition is essential for the economic success of medicinal plant related enterprise and also to enhance the medicinal value of the raw drugs obtained from such plants. Even authentic plant material is liable to be rejected, or accepted at a low price, owing to inadequate quality and strength, or for not conforming to the physico-chemical parameters, to the concentration of the active constituents, or marker compounds as per the pharmacopoeial standards or the consumer/industry requirements. This results in an economic loss to the cultivators or collectors of the medicinal plants, and also raises doubts about the efficacy or the potency of these plant drugs. The compilation of a technical report provides suggestions for helping in value addition of medicinal plants through the improvement of the quality of the plant material and also by quality assurance of the plant material or the semi-processing of the material to a value added product. Apart from the various value addition techniques, the pharmacopoeial standards for 61 species have also been included in this report.

For each of the 80 commercially important medicinal plants of Karnataka and Tamil Nadu, a report has been prepared on the simple formulations for Primary Health Care. This report is based on the extensive referencing of the classical texts of Ayurveda.

Another step in the process of "ethnomedicine" capacity creation is represented by the processes of standardization[3] using modern techniques. The director of the Laboratory, Dr. Padma Venkat, explains: *"Traditional healers often depend on subjective parameters like taste, smell and unwritten knowledge to determine the quality of the ingredients and the efficacy of medicines. FRLHT is working to capture and document these using modern methods. This will make the parameters more objective so that any one can check them."*

The FRLHT has also developed technical skills and know-how to develop medicinal and health products. The laboratory has expertise in handling raw drugs, semi-processing and storage and in production optimization. A Good Collection Practices (GCP) methodology and training manuals in Tamil and English have been

[3] 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.

created with the guidance of American College, Madurai, and the FRLHT during 2001–2003. This promotes three strategies:

- Collection of only the mature parts at maturity timing to get the best quality, which also provides optimal quantity and maximum price.
- Collection using less damaging methods, for example, hand plucking instead of sickle cutting.
- Proper post-harvest processing: drying, weeding, grading, packing, etc.

Apart from the methodology of documentation, and the promotion of good collection practices, the FRLHT has developed, in conjunction with the CCD and the local communities, the Community Health Traditions Register (CHTR), for the protection of community Intellectual Property Rights. Participatory workshops are run with the interested community that helps to identify and document the main medicinal plants, their economic significance to the ecological history contained in the biota on indigenous, and local community lands and territories.

The inspiration for this now widespread initiative arose not only from the desire to protect community intellectual property rights, but it was felt that through a process of documentation, communities could also renew or develop resource management strategies.

5.2 Processes Through Which the Ethnomedicine is Diffused

The natural next step of this process of knowledge acquisition through documentation and research has been the sharing of such knowledge with the immediate concerned groups, that is to say the local villages and their local institutions (*Kalasams*). The FRLHT has, over the past 10 years, organized more than 200 training programs for forest departments, NGOs, and communities participating in the medicinal plants conservation projects. The FRLHT currently specializes in developing need based training courses and educational events that serve as supportive means in the process of conservation and revitalization of Indian Medical Heritage.

In the purpose of educating villagers and increasing their knowledge of medicinal plants and traditional health practices, a Medicinal Plants Conservation Park (MPCP) has been developed by the CCD in the Madurai district at the campus Sevayoor.[4] The park consists of an Ethno-Medicine Forest (EMF) spread over 33 acres with a collection of over 500 plants species.

This area is known for being resource-rich in medicinal plants and herbs, and consequent knowledge systems, like *Naattu Vaidhyam* (Traditional Health Practice).

[4] *Sevayoor* in Tamil means 'Place of Service.' This place was named such, also because of the long-standing inspiration of the founding team of the 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.

The organisation's work with documenting *Naattu Vaidhyars* and information on the local species of medicinal plants and herbs, led them to another of their long-standing programmes – issues of conservation and livelihood in the medicinal plants sector, and allied work like revitalisation of local health traditions. Sevayoor developed as the base location for the CCD's work in the medicinal plants sector.

5.2.1 Medicinal Plants Conservation Programme in Sevayoor

Sevayoor is gradually moving towards the vision of the CCD founding team, *Karmakshetram*, or 'Work-field,' which will be a model of a self-reliant community of traditional occupations, whose livelihood needs will be met from within the community itself. In addition, this independent centre would also be a nub for the generation of innovative ideas and institutions, towards conservation and sustainability for coming generations. The campus aims to be the laboratory for all research, studies, and experiments in the area of medicinal plants. For the CCD team's innovative endeavours to garner increased community participation, ownership and responsibility in their resources. Similar regional resource centres are also being set up at Natham and Nagapattinam, which function as Community Conservation Centres (CCC) as well, owned and managed by the local communities, facilitated by the CCD.

All of the organisation's research, field and community work based in the medicinal plant sector has been based in Sevayoor since then. The Medicinal Plants Conservation Park in Sevayoor is their ex-situ conservation location for medicinal plants and herbs, and representative of the medicinal flora of Virudhunagar district. The conservation programme includes the following components:

- An Ethno-Medicine Forest (EMF) spread over 33 acres with a collection of over 500 plants species.
- A Herbarium Seed Raw Drug museum (HSRD) that houses seed samples of over 900 species of traditional medicinal plant and herb varieties.
- A Demonstration Garden where species are organised in 12 themes according to their properties.
- Changes in them on interaction with other aspects of nature, and according to how they are used by the local community. These include the water garden, *pancha bootha* (five elements) garden, rock garden, oil garden, *thamboola* garden, *anchara-petti* garden, etc.
- A nursery with more than 3 ha seedlings.

These gardens and theme parks also serve as a demonstration for students and others from the local villages, who are then encouraged to maintain and promote school, temple as well as community herbal gardens, with the guidance of the CCD team and *Kalasam* women.

5.2.2 Conservation and Education Programmes

The conservation park at Sevayoor has served as a demo for others in the villages to promote and maintain such herbal parks in other areas. Starting as a guide to conservation education from its own campus, the CCD evolved to give several customised conservation, training and education packages to different people and work groups, besides organising conservation and awareness activities. Training programmes for schools, educational institutions, and others like NGO staff, teachers, aspiring Naattu Vaidhyars, have been developed. Biodiversity contests, camps for school/college students, exhibitions, fests, and other outreach programmes are also conducted as part of the Conservation Education Programme. During these programmes, mass planting by children and students are always conducted. A Conservation Education Manual has also been prepared as a guide for teachers to impart the same as part of their curriculum in schools.

Similar training material is being planned for other themes. The Programme titled '*Yagnam*' is being held every year for students during their summer holidays. This camp for students focuses on traditional ceremonies, rituals, lifestyles, and attempts to explore their scientific, pro-conservation values and significance. During this programme, the students are also trained in practical, day-today skills that will be useful in their daily life, as well as make them self reliant.

5.2.3 Revitalisation of Local Health Tradition

Similarly, Sevayoor has been the station for allied activities in the conservation of medicinal plants, i.e. the revitalisation of local traditions related to it, *naattu vaidhyam*, local health traditions, household remedies, and so on.

The documentation of *Naattu Vaidhyars* and their information was the foundational work on the basis of which the CCD undertook further such work. Today, Sevayoor is a storehouse of knowledge for medicinal plants and attracts numerous people who include students, *Naattu Vaidhyars*, doctors from the mainstream, community enterprise promoters, and so on.

As part of the revitalisation programme, the CCD started a residential community college programme, Sadana, at the Sevayoor campus. The college admits individuals from traditional medicine families, and offers courses in traditional health care systems, like Siddha and Ayurveda, besides also training in medicinal plants usage, preparation, as well as training under active health practitioners. Later, the *Naattuvaidhyashala*, a centre for training in *naattu vaidhyam*, was also integrated with this programme, when the response from the *Vaidhyars* indicated that an institutional framework was required to sustain and take the naattu vaidhya tradition for coming generations.

A Naattu Vaidhya Dispensary, as well as a medicinal preparation unit, are also housed at Sevayoor, under the supervision of the *Vaidhya* residing at the campus itself. The dispensary is looked after by two Kalasam groups, who prepare medicines according to demand and sell under the brand name of their group.

5.2.4 Programmes and Events

Besides the study and dissemination activity, Sevayoor is also the place for hosting all of the CCD's regular programmes, events, conventions, fests, etc., that aim at revitalisation of local knowledge.

The annual Mahakalasam fest is held on the Adi perukku day. The first Kalasam *Thiruvizha* (Fest), which took place as an experiment in 1994, has since then become a successful and much-celebrated annual organisational event that takes place on *Adi Perukku*[5] day. The objective of the meeting is for all Kalasam groups working in different areas to meet, share ideas and experiences, and learn from each other.

During *Vaigasi Visagam* every year, training programmes and consultations are held for the medicinal plant community, the sanghas of medicinal plants collectors and cultivators at Sevayoor. This is the lean period for medicinal plants and this is the only time of the year when traders in this sector shut shop. Hence, this day is utilised for their knowledge, skill sharing and upgradation. All the regional Medicinal Plants, Community Based Organisations as well as Community Enterprise and related Consultations and conventions are held at Sevayoor.

5.3 Linking Innovation, Ethnomedicine, and Entrepreneurial Capacity: The Creation of GMCL

The participative assessment of local communities needs carried out through study of the Kitchen Herbal Garden (KHG) program in 1999, for evaluation of community participation, led the CCD to the next stage in the process of evolving community ownership, through the constitution of a community based enterprise active in the medicinal herbs sector. This study for the KHG program was conducted in conjunction with the local village organizations (*Kalasam*) to analyze changes in community health, food regime, and routine, ability to manage their medicinal needs, etc., and evaluate community participation.

These studies showed that, in poor households, health expenses were high, but for the resource-poor rural women their own health figured last in the priorities, and often neglected. The study of local health traditions showed that 30% of savings was used for primary health care needs. An informal study conducted in the CCD's operational area showed that the majority of the population here preferred

[5] In Tamil culture, the *Adi Perukku* day is especially significant for farming communities. On this day, starts the entire process of preparing the soil for ploughing and sowing, amidst fervent prayer and celebrations. *Adi* is the Tamil Month, and *Perukku* means to increase or proliferate. Ventures started on this day are said to prosper. Hence, it was decided that the annual Kalasam fest would also be held on this day.

construction labour because of the quick ready returns that it brings, and there were not any who seriously considered traditional health practice for an occupation. The occupation of medicine and health practitioners is also closely linked to the medicinal plants sector and issues related to medicinal plants, their trade, and conservation. In order to combat this and revive the Naattu Vaidhya tradition, the CCD set about mobilising, validating, and revitalising health practitioners and their knowledge by way of documentation, consultations, and other programmes, paving the way for a revival of traditional health practice as a livelihood option.

The FRLHT and CCD's increasingly significant work in the Medicinal Plants sector, both in research with traditional health practitioners and relevant studies, as well as community activity like the training for and promotion of kitchen herbal gardens, led the organisation to look at communities that are directly impacted in the medicinal plants sector: the cultivators and collectors of medicinal plants (MP). The CCD's commitment to sustainable livelihood motivated the organisation to explore new ways of making MP cultivation and collection a sustained revenue-generating community enterprise. MP Farmers and gatherers in the resource rich Natham area were organised into groups. GMCL was started in 2000. Another medicinal plants community enterprise that was started was the Semi-Processing Unit (SPU) for producing value-added medicinal plant products.

The CCD, along with Mahakalasam, undertook initial community organisation and mobilising of share capital, besides also the market surveys and the groundwork study for trading in medicinal plants sector. The CCD has facilitated the successful implementation of the GMCL model of community enterprise by shouldering the risk factor of a new venture and providing its resources, skills, and knowledge towards community mobilising, organising, orientation, and support, besides also taking up logistical costs before sale. Today, the medicinal plant community enterprise provides livelihood opportunities to over 1,200 families of mostly landless labourers, organised into over 160 gatherer's sanghas, and another 400 families of small and medium farmers, also organized into groups. Its trade volume has grown from 30 t in the first year (2000) to 500 t in the 4th year (2004), and the turnover has increased from Rs 1.5 million to Rs 9 million.

5.3.1 Increase of Ethnomedicine Capacity at the Horizontal Level: The Interaction Between GMCL and the Other Village Organizations

GMCL seems to be well imbibed in the *village network organization structure*. This is constituted by the *Kalasams* and *Mahakalasam Federations*. These village organizations have been formed by the CCD for the purpose of collective savings

to be forwarded as credit to the members of the group in times of need, and are structured at different levels:

- *Kalasam* group[6] (inner-most circle)
- Cluster level consultative committee[7] (middle circle)
- *Mahakalasam Federation*[8] (outer-most circle)

This integration between the newly established village organizations (*Sanghas*) and the previous ones increases the synergy between them and represents a distinctive element of GMCL. The link between *Kalasam* and GMCL is evident since the constitution of this community based enterprise. When it was decided that this concept would be piloted in the Virudhunagar district, the CCD, along with *Mahakalasam*, undertook a major share of the responsibility, and took charge of initial community organization and mobilizing of share capital, besides also the market surveys and the groundwork study for trading in medicinal plants sector. The role of *Kalasam* has not just been important in the constitution phase of GMCL but has increased in the last few years. At the beginning, GMCL focused its activity exclusively on the sale of raw material. *Sanghas* represented the concerned village organization. Since 2004, the scope of GMCL activity doesn't just involve gatherers but also members of *Kalasams*/*Mahakalasam*. Until recently, *Mahakalasams* have marketed the semi processed Medicinal Plant products by sales through *Kalasam* members.

The participation of *Kalasams* and *Mahakalasam* is not just limited to the sale of GMCL products but it also involves a broader commitment since an earlier stage. 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* contributed in undertaking the initial market survey before setting up the unit, in 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 the GMCL initiative has also assumed a financial dimension. Fifteen Kalasams have invested Rs 5,000 each and have become partners in profit with GMCL, in the SPU endeavor.

In the future, a further financial involvement of the *Kalasams* in GMCL activity 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.

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[6] Each Kalasam group has not more than 20 members and elects 2 leaders. Every village can host different Kalasams according to the numbers of villagers who wish to be involved.

[7] The cluster is the next outer circle to the Kalasam group in the Mahakalasam structure. The representatives from the Kalasam groups join together to form the cluster level consultative committee. Around 25 Kalasam groups come together to form the cluster at the parent-village level. The cluster level consultative committee is the intermediary entity and maintains the communication between the Mahakalasam (Planning), and the Kalasam groups (Execution).

[8] The Federation is the outer-most entity of the Mahakalasam structure and maintaining most of the communication with external entities like individuals, banks, NGOs and other external organizations. Five clusters have come together to form a Mahakalasam Federation.

This active interaction and cooperation between GMCL and the other village organizations, such as *Kalasams,* has helped the villagers in*:*

- Reinforcing their linkages with mainstream institutions.
- Enhancing their opportunities and innovation.
- Funding better and more effective ways of supporting development initiatives, local resources and skills.

As the social exchanges within village organizations allow a transfer of information and knowledge, the efficiency of ethnomedicine capacity enhancement has been increased.

The existence of previous village organizations allows GMCL and the members of the *Sanghas* to benefit from different village-centered services present in the village, such as credit, training, etc. The *Mahakalasam* in the Pulvakkarai, Suranam, and Natham villages are the head-offices of two centers, such as the BDS (Business Development Service Center) and the CFC (Common Facility Center). The BDS and CFC have been created with the collaboration of the CCD to support the different livelihood activities in the area and to promote entrepreneurship among the women. Currently, the BDS provides services to about 1,000 medicinal plant gatherers and cultivators. Capacity building programs, entrepreneurial training, inter-mediation with financial institutions, effecting linkages with service providers and markets, value addition services, provision of tool kits and other equipment, alternate building material, documentation services for their practices, business information services, assistance with sales outlets, and developing guides and manuals are some of the services offered by these centers.

As a consequence of being a part of a wider organizational network at village level, GMCL has been able to benefit from different services already existing at community level. The social exchanges within village organizations allow a transfer of information and knowledge (Ahuja 2000). This facilitates its action and increases its performance.

When diverse individuals and their organizations interact with one another, they begin to mutually understand the common needs and priorities (Wilkinson 1991; Luloff and Swanson 1995). Such action provides the individuals with the ability to retain community identities, maintain local control over decision-making, and address their own development needs.

Some key features that emerge from the case study in order to promote a successful innovation processes and enhancement of innovation capacity related to traditional knowledge.

(i) *Processes that integrate local and scientific knowledge*

An important aspect highlighted by the case study is the importance of integrating local and scientific knowledge. Local knowledge associated with the use and conservation of medicinal plants is either codified in ancient scriptures, or is folk-based, and is transmitted through generations in the form of community-based health traditions. The codified knowledge has managed to expand globally through official recognition and some corresponding policy and financial support. The

largely undocumented folk-based knowledge and traditions, on the other hand, have survived on their own in the absence of any official recognition or policy and administrative support by governments at the state and national levels. The problems, progress, and prospects of folk and codified streams are, therefore, distinct, with the former deserving more attention. Despite the lack of official recognition and support, the efforts carried out by the FRLHT and CCD in Southern India have been successful in revitalizing and promoting folk knowledge systems of medicine, and integrating local and scientific knowledge through a grassroots community group approaches.

As the case study points out, development activities that work with and through traditional knowledge and organizational structures have several important advantages over projects that operate outside them. Traditional knowledge provides the basis for grassroots decision-making, much of which takes place at the community level through village organisations, where problems are identified and solutions are determined at local basis. It has been through the integration of ethnomedicine knowledge and scientific know- how that the communities in Karnataka and Tamil Nadu have been successful in enhancing their ethnocapacity in order to promote their own form of development.

(ii) *Effective partnerships and network structure*

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. These have occurred in a variety of ways and across different types of stakeholders groups. For example, in the field of 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.

The importance of the network as an instrument to enhance the innovative capacity of the organizations to create, diffuse, and use knowledge has been already emphasized in literature (Castells 2000; Cooke and Wills 1999). Some authors have underlined the capacity of a network in creating platforms of trust and cooperation, where the exchange and uptake of ideas, knowledge, and experiences by the different stakeholders can be facilitated.

In the interaction between the different stakeholders of the network, the ethnomedicinal capacity has been created and diffused. The process of enhancing the capacity of ethnomedicine through the network involved two elements:

- The first element consisted of the patterns of partnership between scientific, developmental organizations and local communities and the way this can lead to collective design of rural innovation practices.
- The second element consisted of the new skills and insights that local communities, NGOs and scientists (such as CCD and FRLHT) get from each other when they interact through partnerships.

The most important implication of this consideration is that common ways of promoting innovation in local practices need to be supplemented by approaches that

focus on developing rural innovation capacity in a more holistic sense. One of the strengths of the approach, followed by the stakeholders of the network to promote ethnomedicinal capacity, is represented by the focus on local priorities and needs.

These priorities and needs have been identified and analyzed through participative assessment exercises and the mentioned field studies. The active research undertaken has consisted of an iterative inquiry process that balances problem solving actions implemented in a collaborative context with data-driven research to understand underlying causes enabling future change (Reason and Bradbury 2001). Having said this, a noteworthy area, which deserves more attention to enhance ethnomedicine, is the establishment of more sound partnerships with outsider organizations. Networking with other governmental and non-governmental organisations, and sensitisation of mainstream institutions, such as universities and policy makers, is another important line of action that should be strengthened. This promotional strategy may provide the basis for a national health system that incorporates support to local health traditions, with the ultimate aim being to ensure effective and affordable care for all those who need it.

(iii) *Capacity building and human capital development*
Training activities, such as workshops, *ad hoc* programmes, etc., organized by local NGOs have been very important in order to enhance a process of capacity-building at community level centred on their traditional knowledge. In the case study presented, the training organized by the FRLHT and CCD at village level has been a prerequisite for the creation and diffusion of ethnomedicine capacity and its enhancement. On the occasion of programs such as local healers' conventions and village botanists' workshops, local communities in village learned new skills of identification, herbarium preparation, and new uses of medicinal plants. This has helped them in recognition and valorization of the local knowledge relevant to medicinal plants' use and conservation.

The final result has been the shift from a form of *individual* knowledge, mainly possessed by the folk healers, towards a form of *collective* knowledge, more diffused at community level.

A range of training programs and capacity building initiatives, involving issues such as processing and marketing of herbal drugs, value addition activities, and sustainable harvesting and collecting techniques for medicinal plants, have been fundamental for the creation of village community enterprises, such as GMCL. Nevertheless, the link between ethnomedicinal capacity building and participation of the community in activities, such as GMCL, is not always robust, but it is also influenced by social structures and caste belonging. It has been observed that in many other villages in Tamil Nadu, where the promotion of traditional knowledge has taken place, the villagers have not participated in the GMCL initiative, neither as gatherers nor as sellers or consumers of GMCL products. Strong social and cultural constraints prevent, in some cases, an increase in the participation of villagers in GMCL activity. In the village of Thimmapuram (Tamil Nadu), only four villagers are engaged in collecting herbs activity. Although the CCD informed the villagers on the possible economic returns of this activity, the villagers didn't show any

interest in taking part in the collection of herbs. Among these village communities, as this activity is associated with a low caste and tribal background, it represents a social stigma.

The enhancement of ethnomedicine capacity through a process of capacity building has strength the existing capacities of communities to participate in bioprospecting activity through their village institutions. The link between participation and capacity-building has been underlined in the literature (Duncan and Thomas 2000; Aspin and Chapman 2000). This could be an effective response to increase the capacity of a community to negotiate and to establish a more equitable relationship with other external stakeholders. Besides, 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 aspect is particularly important in order to increase the effectiveness of the community role in using their traditional knowledge for their own benefit and enhance the sustainability of community initiatives in this direction.

The enhancement of ethnomedicine capacity, through a process of capacity building, could also 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.

(iv) *Social capital and collective action underpin knowledge sharing, learning, and collective action*

Organizational theory and empirical evidence support the notion that knowledge is socially constructed. A process of mobilization and collective action develops a shared cognitive system and shared memories. These forms of organizational cognition, which call for the understanding of events, open the opportunity for social interpretation, as well as the development of relatively dense interpersonal networks for sharing and evaluating the information, thus creating effective learning systems.

Organizational learning can be relatively low level or single loop, involving only minor adjustments and fine tuning of existing organisational images and maps. Conversely, it can be reflected in the alteration of existing norms, assumptions, and values that govern action. Such learning is referred to as high-level or double-loop learning (Cousins and Earl 1992; Zeigler et al. 1996). Social learning has been an effective strategy to bridge villagers entrepreneurs' technical and managerial capabilities, enhance their self-confidence and organizing potential to advance their interest and effect social change. One such promising and potentially transformative change concerns their variable, yet important contribution to education provision, youth entrepreneurial apprenticeship etc.

Local organizations promoted to enhance ethnomedicine capacity, such as *Sanghas* and *Kalasams*, have been effective in improving the levels of knowledge and skills of the rural folk, through informal education and training programmes. The success depends on the type of training, number of training sessions attended, and also the quality of training organized by the field workers of the CCD. Meetings and discussions at the community level, organised by resource persons and field

workers directly to *Sanghas* and *Kalasams* members, have helped to raise their levels of information, awareness, and knowledge.

In the approach followed by the FRLHT and CCD, there is a clear focus upon knowing the experiences of the villagers in their everyday life; there is an equally strong focus on making those experiences collective through taking part to the same activities related to their ethnomedicine knowledge. The fact that these village organizations, such as *Sanghas,* are created on the basis of collectively owned cultural and social endowment, facilitates the creation of solidarity among community members and receptivity to collective action.

The network constitutes, therefore, a specific way of coordinating the personal and interpersonal relationships that help the building of trust and prevent the generation of opportunistic behaviours. A woman from Minitankulam village affirms: *"It is good to be a member of the Sangha. This helped me to meet other women of the village. We share our problems and we support each other. If someone is in need, or if I am in need, I know that I can rely on them and they know that they can rely on me. This is mutual."* The establishment of these community networks, which are the result of these community organizations, has allowed resources to be pooled, actions to be coordinated and safety nets to be created in order to reduce risks for community members (Bourdieu 1997).

The case analyzed is a clear example of the applicability of innovation systems thinking in a developmental context. Thus, the importance of connectivity among many different stakeholders groups has been demonstrated in a number of respects, as has the degree of institutional change needed to effect viable partnerships. In addition, there are many examples of learning and capacity development at different levels and among the stakeholders groups that would not traditionally interact, at least not to the degree shown in this case. Even more important has been the degree to which formal science has been able to integrate with the traditional knowledge "holders."

It is necessary to make efforts to strengthen such pa between scientists, NGOs members, and local communities through convenient policies and actions. The FRLHT and CCD case study highlights the need to link the poor to other social and economic agents, whose capabilities and perspectives are necessary for many substantive innovation processes to take place, and whose particular interests and perspectives need to be considered, confronted, and negotiated with those of the poor.

The case study demonstrated that community-based and local approaches, such as local healer's workshops and village biologist program, can synergistically forge linkages between local knowledge with the formal sciences (in this case botany and ecology) and generate positive impacts at various levels. India, although the majority of the population still relies on local knowledge systems to meet their health needs, the official policies and national support structures are inadequate for traditional system of medicine and almost absent for folk medicine. NGOs like the FRLHT and CCD have demonstrated that community-based approaches, such as the traditional healers and the village biodiversity register programs, can provide a platform on which holders of local medicinal plant knowledge systems can interact with the holders of formal knowledge (e.g. botanists and other scientists). These approaches have also generated positive outcomes at the local level. These

outcomes show a way to achieve the larger goals of equity and empowerment, as conceived in community-based conservation. In the case of community-based medicinal plant conservation, however, the achievement of these important goals is limited to local level. In order to make these goals more durable and widespread, such community-based approaches that build on local medicinal plant knowledge systems, need to be encouraged with supportive policy and legislative measures at the national and the global levels.

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Chapter 6
GMCL, the Supply Chain and the Final Market

Abstract Over the past few years the medicinal plants have regained a wide recognition. The medicinal plant sector is promising, being on the increase in many countries, India included in terms of sales volume and turnover. Despite the fact the tribal communities are gatherers and cultivators of medicinal herbs, the supply chain as it is currently structured, is unable to improve the living standards of the underprivileged communities. The main objective of this chapter is to explore the potential in medicinal plants resources, to understand the challenges and opportunities with the medicinal plants sector especially in relation to poor and marginalized local communities.

The chapter portraits the supply relations in the medicinal plant market of GMCL. The chapter will show how GMCL, which both supplies raw herbs and produces herbal medicines allows an active involvement of local communities in the herbal sector and promotes a more equitable sharing of benefits in the sector, while allowing a more sustainable use of natural resources. Conclusions and lessons to promote type of community enterprises such as GMCL, to reform the supply chain and to promote new forms of partnership between ayurvedic firms and communities are provided.

Keywords Herbal medicine • Supply chain • Local communities • Ayurvedic sector • Tribal communities

The aim of this chapter is to give a general picture of the supply chain of medicinal herbs in India, as well as the final market of ayurvedic products. GMCL is active in the herbal market in a double way: as a supplier and as a final product producer. Following the dynamics involved from the collection to the manufacture of medicinal herbs will allow us to better understand the economic framework, as well as the main challenges of the market structure where GMCL operates. After having presented this context, we shall proceed by analyzing the market segment within which GMCL operates. The marketing strategies followed by the company in both urban and rural market will also be briefly examined. In this endeavor, we will try to give insight into

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the perceptions of the different actors of the final market. We shall conclude this part by drawing an assessment of the challenges that GMCL has to face while operating in the herbal sector market, as well as the opportunities available.

6.1 The Supply Chain of Medicinal Herbs: Collection, Trade, and Consumption

Available case studies and published analyses (including Parrenas 2000; Pierce and Laird 2003; Prahalathan 2004; Rahman 1999) suggest that there are five categories of actors involved in the marketing channels for medicinal plants, from their movement from the forest or farm, to their final export or consumption as drugs or herbal preparations. These actors include:

- Collectors
- Petty Traders
- Private Agents
- Wholesale Dealers, and
- Final Consumers

Medicinal plant collectors are generally marginal farmers and laborers. They receive a cash income to meet their basic requirements for food, healthcare, and child education by selling medicinal plants (Kala 2003).

There is very little information available by which to characterize the market actors. It appears from relevant studies conducted on this subject that men are the primary participants in the market beyond the collection stage, with no mention being made of women's roles as agents, contractors, or wholesale dealers. Furthermore, important socio-economic data relating to the social and economic backgrounds of traders, agents, and dealers, including questions of whether or not they belong to the same families or castes, or are regionally affiliated, is not generally available.

In addition, little is known of the role played by the medicinal plants trade in the overall livelihoods of those involved, from the private agents through to the final consumers. It is unclear from published information whether traders tend to specialize in medicinal plants, or whether, like the majority of the collectors, they are involved with additional commodities or primarily work in altogether different occupations. This information, which would reveal the extent of each of the actor's stakes in the market, is extremely important in order to understand and assess their relative contributions and needs in medicinal plant development. Finally, since the numbers of people involved under each of the categories described above are difficult to estimate, the degree of concentration of the market at various stages of the process cannot be discerned.

The major reason for the information gaps described above is the highly secretive nature of the medicinal plants trade (Kala 2003). Although it is difficult to procure

reliable information regarding the people, plants, and paths involved in the marketing channels, it is nevertheless possible from the information available, to discern a general, though not universal, path of transactions followed by medicinal plants.

It is important to note, that many, and perhaps most, medicinal plants will not follow this exact path. In some cases, there may be multiple sales from one market based private agent to another, or else the products may be directly supplied by the market agent to the final consumers. In addition, trade activities may move in and out of both the formal sector, as well as the legal boundaries at various points of the chain of transactions.

What frequently sets the chain of transactions in motion are advance orders placed by wholesale dealers in the large urban markets to private agents, usually based in comparatively smaller markets which may be situated at considerable distances from the wholesaler's location. These private agents then employ petty traders who visit the local markets.

Except when associated with agricultural products or other forest goods, local markets are rarely round-the-clock establishments. Petty traders visit these markets and buy directly from the collectors/farmers or their representatives. The purchase of medicinal plants is generally based on fresh weights, although some traders prefer to use dry weights. The petty traders then forward these items to the district level markets for sale to private agents.

Final transactions generally take place in very large markets located in the urban centers (Chennai, Delhi, Mumbai). High-volume buyers purchase the products from wholesalers to supply Indian production industries, or the international market. Given that most of the trade occurs in the informal unorganized sector, and that whatever little activity occurs in the formal sector suffers from a great deal of false reporting and poor record-keeping, it is virtually impossible to assess the current volumes of trade in the domestic marketing channels. However, expansion of the volume of trade seems indisputable.

In addition, there is little data available on the social and institutional contexts of the market transactions, making it difficult to speculate on the decision-making patterns of the different actors involved. The role of social relationships of obligation, caste, familial ties, and other connections therefore needs to be considered, as do decisions regarding personal health care and local uses of plants, which also affect decision-making patterns.

Given that the private agents sometimes enter into advance contracts with the wholesalers, there is a distinct possibility that these agents may provide credit to petty traders, who, in turn, provide it to the villages or collectors; although this is a known practice in some cases, the overall extent to which it is done is not clear. In addition, little is known about the trading scenario of non-cash economies that still exist in large parts of India.

The dearth of market information available to collectors and others located at a distance from the major urban markets also affects decision-making, while the lack of storage technologies and facilities is another major factor, which probably accelerates sales of plants even when prices may not be as competitive.

Virtually no processing or value addition occurs in the marketing channels prior to purchase by the wholesale dealers. The few exceptions to this involve only the most basic processing of the products.

In general, there appear to be few, if any, processing or quality requirements in the major Indian markets; wholesale agents buy maximum quantities of all specimens, and pay according to weight, regardless of quality. Even basic grading and cleaning operations tend to be centralized in major Indian cities. It is a commonly held view among those associated with the medicinal plants sector that the marketing of medicinal plants is generally biased in favor of the so-called 'middleman,' resulting in low returns to the stewards and collectors of the resource. In many cases, prices paid by wholesalers are of a higher magnitude than the selling prices for collectors, even though no value addition to the plants occurs during the stages falling between the collector and the wholesaler.

Studies that document these price differences usually posit the view that the middleman exploits the lack of market information to obtain a cheap price. Certainly, this is at least partly true: the market is imperfect in terms of price-setting because of the restricted flow of information (Kala 2003; Strauss and Corbin 1998). However, the question of who benefits from this situation is more difficult to answer, requiring careful study of each transaction. In addition, such studies must also do away with the hypothesis of the 'middleman,' and instead recognize that there are several middlemen, including petty traders, contractors, and wholesale buyers, each of whom operates according to the different levels of information available to him.

Given the imperfections and complexities of the market as described above, price behavior is difficult to assess. Prices tend to be volatile and may follow fluctuations between scarcity and over-supply, as well as seasonal variations. In addition, as noted above, prices also vary enormously in different places, a phenomenon, which though still not fully understood, seems to be primarily a result of the general lack of information dissemination and overall awareness of different buyers and sellers at different points in the chain.

Despite the variations in time and space, and the lack of extensive information, there is a reasonable body of evidence available from micro-studies to suggest that medicinal plant prices are showing an overall rise at a relatively fast rate. In some cases, this has been linked directly with the growing scarcity in supply of several commercially valuable species.

The number of local traders, even in the large collection areas, is small (Fig. 6.1).

An important reason why contractors and traders exercise such strong control is that the collectors depend on them for loans. As many collectors are poor, they often need to borrow money, which is provided by the contractors and traders. This practice, which is widespread, keeps the collectors tied to local contractors. Also, as they have only small amounts to sell, they do not have the option of selling directly to wholesalers.

Few specialized wholesalers are engaged in this business. Small-scale traders and agents of the larger drug manufacturers transport the plants from the collection areas to the processors operating in the urban areas. These may be small or medium scale local operators, or large scale Ayurvedic and allopathic drug manufacturers.

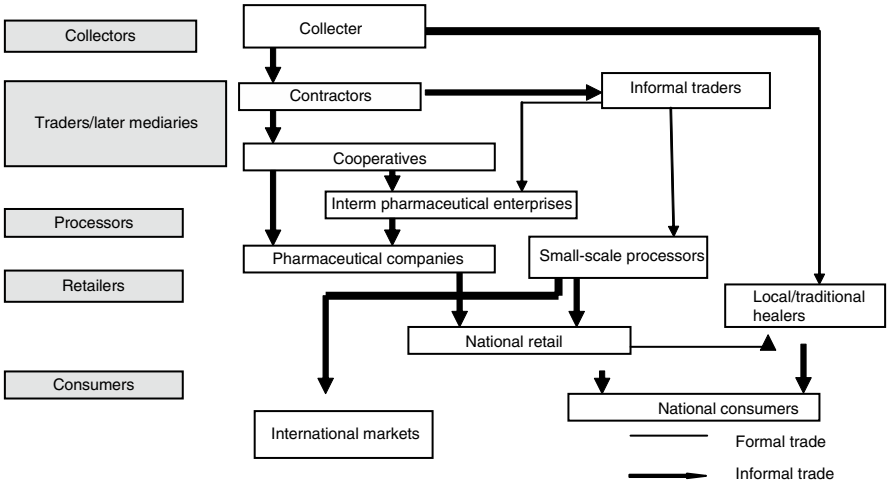


Fig. 6.1 The chain: from collection in the wild to consumption in India

In addition to legal collection it is reported that a large amount of medicinal plant material is collected illegally (KIT 2003). In fact the amount collected without permits is larger than the legal collection (Chakrabarti and Varshney 2001; Ramakrishnappa 2002). There is very little detailed information available about the cultivation, trade, processing and consumption of medicinal plants (Holley and Cherla 1998).

6.1.1 The Ayurvedic Medicine Industry

Ayurveda is predominant among India's traditional health systems. It runs parallel to the modern health care sector and has a 70% share of the formal medicine market. Ayurveda manufacturing units can be broadly classified into the organized and the unorganized sectors. The organized sector consists of both large and small manufacturing units.

The large manufacturing units comprise the well-established manufacturers who operate in both domestic and international markets. They are the flag bearers of industry and are mainly responsible for the revival and growth of Ayurveda. The largest of these in terms of sales is Dabur India Ltd., while Shree Baidyanath Ayurved Bhawan Ltd. (referred to as Baidyanath in short) claims to manufacture the largest range, with over 700 ayurvedic formulations. Other major players in the industry include Himalaya Drug Company Ltd., Charak Pharmaceuticals, Zandu Pharmaceuticals Ltd., Unjha Ayurvedic Pharmacy, and Arya Vaidya Sala. Many more companies have diversified into Ayurveda. These include pharmaceutical companies, such as Cadila Healthcare Pvt. Ltd., Albert David Ltd., Cipla Ltd., as well as corporates from other sectors, such as Bajaj Group, Velvette International, etc.

Table 6.1 Sales figures of major Ayurveda manufacturers (company sales in 2008–2009 in million Rs)

Dabur India Ltd.	3,220
Himalayan Drugs Co.	1,400
Baidyanath Ayurved Bhawan	1,360
Zandu Pharmaceuticals	1,200
Maharishi Group	800
Arya Vaidya Sala	570
Ajanta Pharmaceuticals	200
Nagarjun Herbal Concentrates	120
Multani Pharmaceuticals Ltd.	73
Kerala Ayurved Pharmacy Ltd.	64
Dehlvi Remedies Pvt. Ltd	18
Ayurved Vishwa Bharti	2

The market is characterized by high concentration; the key suppliers in Ayurveda are Dabur, Baidyanath, and Zandu, which together have about 85% of India's domestic market (Table 6.1).

The *small manufacturing units* manufacture a few medicines and operate in a small area, mostly at the local level. According to the Office of the Drug Controller General of India, there are around 8,000 licensed pharmacies who manufacture herbal drugs. The structural breakdown of the licensed pharmacies in terms of large and small companies is unknown, making it difficult to access the level of concentration of the market. The herbal sector in India is, at the moment, quite fragmented and constituted for the majority by these small/medium enterprises.

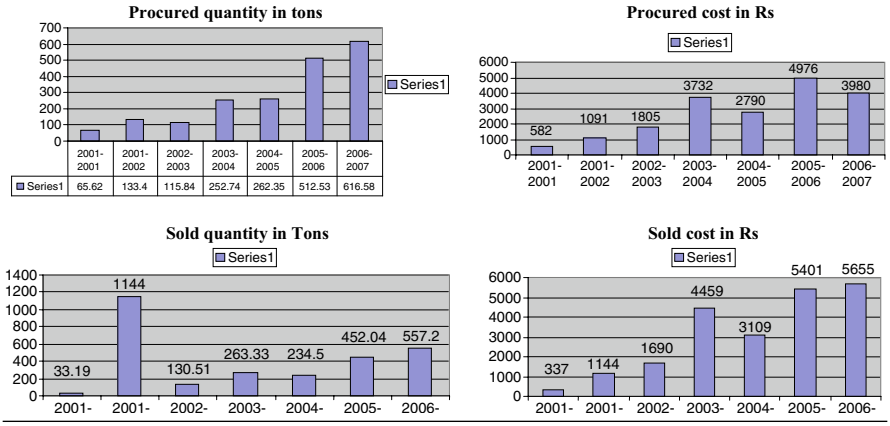
In addition to these licensed pharmacies, there are also a number of small-scale processing enterprises that are unlicensed and operate in the informal sector.

The *unorganised sector* includes practicing *ayurvedic* experts (*vaidyas*) and micro-units manufacturing only a few products and operating at the local level. A reputed *vaidya* generally prepares his own formulations for treatment. The large number of units manufacturing *ayurvedic* medicines can be attributed to the comparatively low infrastructure cost, access to raw material, simple manufacturing process, and lack of standardization of quality and efficacy of medicines.

Ayurvedic drug manufacturing companies, whether in the organized or unorganised sector, are mostly family owned businesses. The origin of most of these companies can be traced back to a *vaidya,* who used to prepare some formulations for dispensing, and the gradual acceptance of medicines led to growth of such units. Many such companies are now being run by third generation owner managers. The ownership pattern has helped in the transfer of knowledge from one generation to other, thereby enriching the knowledge base of families. But it has also brought conservatism and secretive attitudes into the sector, which has affected its amalgamation with the general stream of development. This observation is most evident in the case of standardisation of raw material, as well as medicines.

Table 6.2 Some figures for raw material supply

	2001-2001	2001-2002	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007
Series1	65.62	133.4	115.84	252.74	262.35	512.53	616.58



6.2 GMCL, a Business Model Linking Supply and Demand Side

GMCL can be seen as a link between the **supply** and the **demand side**.

The supply side is represented by the producers (*Sanghas* members), the demand side by the consumers (pharmaceutical enterprises, physicians, medical shops, villagers).

In operating as a link between the producers and the consumers, GMCL is able to reduce the *transaction costs*, especially those pertaining to:

- Search costs (the costs of locating information about opportunities for exchange)
- Negotiation costs (costs of negotiating the terms of the exchange)

The reduction of these types of costs is evident for the raw material segment. The intervention of GMCL has allowed the creation of direct linkages between the producers and the industry, and the reduction of the economic monopoly of middlemen (Table 6.2).

6.3 GMCL Commercialization Strategies and Relations with the Final Segment of the Market

The environment of the enterprise has a great influence on its strategic behaviour; it is therefore necessary to analyze the final segment of the market, in order to understand if GMCL marketing decisions, as well as the relations that the enterprise creates with the others actors of the chain, are effective and able to promote its growth. This implies an analysis of how this enterprise is able to (Fig. 6.2):

- Profile its customers
- Assess the demand and supply

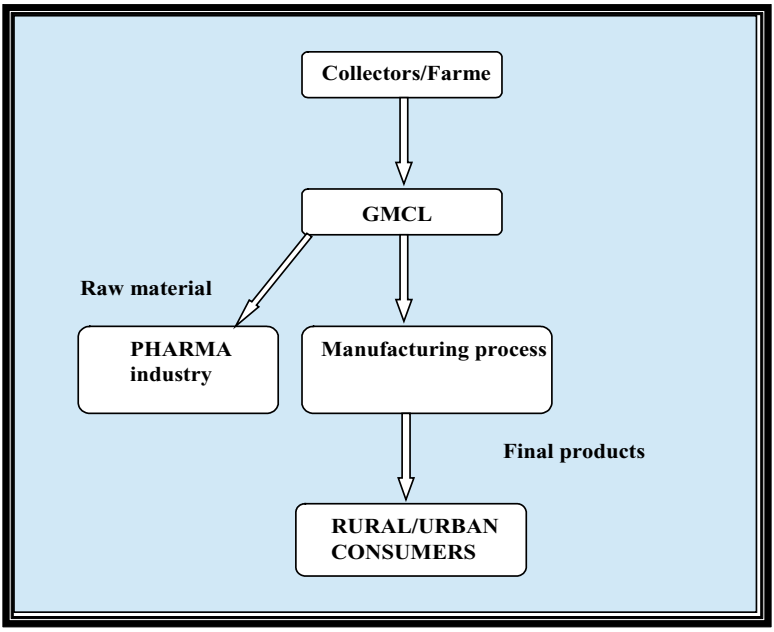


Fig. 6.2 Value chain in GMCL

- Identify and use marketing strategies
- Position its products
- Establish proper linkages with customers and buyers

6.3.1 GMCL and Its Selling Channels on the Urban and Rural Market

GMCL is oriented to the local market and has opted for a market differentiation strategy (rural and urban market). The enterprise is active in two different segments (raw material and finished products). For the segment of medicinal herbs, the market is urban-based and it is represented by pharmaceutical enterprises. For the segment of finished products,[1] the enterprise has adopted a market differentiation strategy, being present in both urban and rural market.

Although GMCL has shown an interest in export in the future, nowadays its urban market remains local. This difficulty in venturing into new international markets is

[1]GMCL products consist of the following: *Jwaracin* for fever (Capsule), *Trigul* for joint pain (Capsule), *Sukumari* for white discharge (Capsule), *Sugam* for cold and cough (Syrup), *Trigul* for joint pain (Ointment), *Haloe* for wounds and cuts (Ointment), *Pittanil* for hyper acidity, *Nisa amalaki* for diabetes.

common to many small sized enterprises active in herbal sector. The cyclical nature of the medicinal plant market makes it difficult for them to determine supply and demand in the markets. Also, non-compliance with rules and regulations of the importing countries and a inadequate technology and quality parameters can represent a problem for these companies. This is probably the case of GMCL.

6.3.1.1 The Urban Market

The current selling channels selected by GMCL in the urban market are represented by physicians and medical shops.

Criteria for the Selection of Selling Channels

The physicians are selected on the basis of their background. They are mainly Ayurvedic doctors holding a B.A.M.S. that integrates the practice of allopathic medicine with Ayurveda. The selection of doctors who practice both Allopathy and Ayurveda as a selling channel increases the chances of sales. As the border between allopathic and ayurvedic treatment is not strictly fixed, there are patients who normally use allopathic medicines who are willing to shift to ayurvedic products, at least for minor ailments. The strategy followed by GMCL for dealing with doctors who can practice both Ayurveda and allopathic medicine can help in capturing this typology of patients.

The **medical shops** are selected on the basis of their activity. These shops sell both allopathic and ayurvedic medicines. In Bangalore the number of medical shops specialized exclusively in the sale of ayurvedic products amounts to 60. GMCL does not use these shops as selling channels. The shops specialized in ayurvedic products generally maintain a loyalty with their suppliers and prefer popular brands when selecting their products.

GMCL selects its selling channels keeping into account geographic specificity; since the GMCL products mainly address middle-low class consumers, the medical shops located in areas comprising middle-low class families are chosen.

Efficacy of Selling Channels

Data collected thorough interviews show that physicians are more successful in promoting the quality of GMCL products. Being professionally qualified, doctors are likely to attract people who not particularly sensitive to price and are more result oriented. On the contrary, the trend shows that those who visit chemists are generally looking for temporary relief and inexpensive products (generally allopathic).

In terms of quantity purchased, from the interviews, it emerged that physicians place bigger orders (average Rs 2,000–3,000) if compared to medical shops keepers (on average Rs 400–500). On the other hand, it can be observed that physicians are

not always punctual in paying for the merchandise purchased from GMCL. Their belated payment can be a consequence of the fact that physicians have the habit of providing credit to their patients. This may sometimes reduce their capacity to pay on the spot. This is not the case for the chemists, who normally pay without delay.

Nevertheless, it needs to be underlined that a drawback of GMCL dealing with shopkeepers is that they may send back the unsold quantity.

Maintaining a diversification of the selling channels is, therefore, important. This can help in reducing the risks that are part and parcel of dealing with a single category of purchasers.

6.3.1.2 Rural Market

In rural areas, GMCL products are sold in Tamil Nadu and more recently, in Karnataka.

In local villages located in Tamil Nadu, the sale of GMCL products is done through sales representatives at the village level, which are selected among the *Kalasam* groups by the CCD field coordinators.

A sale representative explains: *"It is a very simple process. People tell us about their problems. We tell them about the disturbances in their vata, pitta and kapha*[2] *humors and give advice regarding specific diets. We also tell them how to use the medicine and how to apply them. Even before doing so, we conduct meetings through SHC groups and inform the people about the medicines that are available with us. They then come to us whenever they face a problem and ask us to give some medicines. For example, this person had cough that was due to a disturbance of kapha. We gave him the sugam*[3] *syrup that helped him in getting rid of the cough."*

The sales representatives are generally pinpointed on the basis of their interest and willingness to become involved in such activity. The criterion of the age is not taken into account. A sale representative affirms: "*Those that are active in the field are selected. We are not concerned about their social or economic conditions.*" The strength of this system is that the local leaders are selected from among the members of local communities. Therefore, they are familiar with the community, its lifestyles, health beliefs and practices, and are able to build up trust linkages more easily.

In terms of process, the sales representatives at the village level assess the local demand and ask the *Mahakalasam* the quantity of medicines they require to meet the demand. The *Mahakalasam* receives the medicines from the local Manufacturing Unit and distributes them to the local *Kalasam* (Fig. 6.3).

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[2] According to Ayurveda, every living and nonliving being in this universe is a combination of five basic eternal elements, called *Pancha Maha Bhoothas*. The human body is also constituted of these five eternal elements in various compositions. These eternal elements manifest themselves in the human body as three basic principles or subtle energies or humous (tridosha in Sanskrit). The word "*Dosha*" literally means "that which maintains and controls the body." These are *vata*, *pitta,* and *kapha*. These three basic principles govern all biological, physiological, and physio-pathological functions of the body, mind, and consciousness.

[3] The name of the syrup commercialized by GMCL.

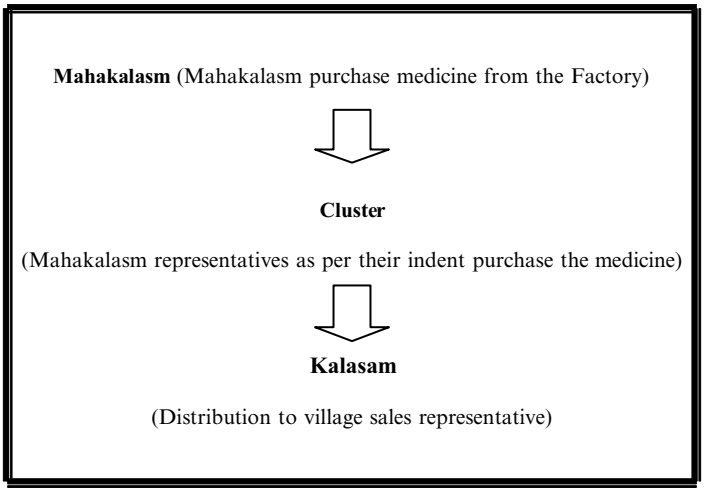

Fig. 6.3 GMCL distribution channels in the rural areas

In Karnataka, the commercialization of GMCL products in villages is also done through local leaders, who are selected by the CCD field coordinators. The local leaders have the task of meeting the members of the *Kalasams* and sensitizing them on the importance of herbal medicine. A sale representative from Maddur points out: *"We advise people through discussions regarding the side effects of Allopathic medication and how they can overcome them. We advice women regarding health and positive aspects of Ayurveda"*. The sales representatives, who will be in charge of selling the medicines locally, will be selected within these groups. The local leaders provide the sales representatives with the GMCL products and obtain a provision from their sales. The local leaders are generally young, educated and come from "respected" families in the village (*"my father was working as a Government officer. He was very knowledgeable and respected in the community"*).

Shivakumar, a young villager from Umlalli, constitutes an example. He explains his experience: *"I am a teacher. I also possess some land and I practice organic farming. I am very interested in Indian medical heritage. One day I have been approached by a field coordinator who explained me about GMCL. I have stated educating women's groups in my village on Ayurveda. I explained them about GMCL products. Villagers before had no awareness on the hazards of allopathic drugs. Now around 25% of the villagers purchase GMCL products. I also convinced my mother on the importance of spreading this kind of knowledge. She also became involved with GMCL and she promotes the medicines in the villages."*

The local leaders and the sales representatives at the village level work in coordination. A follow up system has been put in place.

The role of local leaders is complex, as they are in charge of different functions:

- Recruitment of sales representatives
- Distribution of medicines

– Training of sales representatives
– Follow up

This system presents some similarities with the one of Tamil Nadu, as it is decentralized at the village level and is mainly based on the support of local sales representatives. Nevertheless, in Tamil Nadu, the distribution layout is more structured, due to the existence of institutions at different levels (village and cluster level). This facilitates the coordination between different stakeholders and contributes in making the distribution process much smoother.

In *rural towns,* the commercialization of GMCL products is done through multiple selling channels (petty shops, restaurants, hotels etc.). The commercial activities are usually located in proximity to the main road, a factor that increases the number of potential customers.

In little local shops, the shopkeepers usually adopt a strategy of merchandise differentiation, selling different items at the same time. This lack of merchandise uniformity does not seem to be a major constraint for the sale of GMCL products. On the contrary, this strategy can enhance the sales; it may be possible that the villagers that visit a local shop to purchase a single item may be willing to increase their expenditures.

Emblematic is the case of a shopkeeper close to Elanduri village who mainly sells car replacement items, but who also displays some of the GMCL products in his shop. The owner declares that his business is thriving and that the sale of GMCL products is on the rise.

The number of selling channels in rural areas is at the moment limited. New selling channels should be found in rural areas to promote GMCL products. These could include, for instance, schoolteachers, women associations, such as *Stree-Shakthi-Kendra* (Women-Empowerment Organizations) and Women Federation groups at the village and *taluk* level. The Panchayat could also possibly be involved to a certain extent. At the moment, the promotion of GMCL products among teachers is carried out to a small extent by some sales representatives. These efforts should be incremented. As a sales representative from Perunguri affirms: "*We need to popularize this through women self-help groups. We have to go to schools, anganvadis (Nurseries where children in villages are looked after and taught basic education and provided with nutrition. This is a governmental organization that is present in every village) and motivate them.*" The sales of GMCL products should also be increased through the intervention of local NGOs.

6.3.2 Marketing and Product Promotion

The identification of the marketing factors, to which the clients are more sensitive, is important in order to evaluate the capacity of the company to respond to its consumers expectations.

In our analysis, the different types of the customers of GMCL, in both urban and rural areas, have been considered.

6.3.2.1 Urban Market

Physicians

Physicians[4] attribute great importance to the **quality** of **medicines**. The quality is seen as an instrument to enhance their reputation, to capture the fidelity of their patients, and to build up the trust of ayurvedic products among their patients. Unless the patient will not be able to see an improvement in a given period, he will not come back to that doctor.

Due to its importance, the efficacy of the medicine is one of the main criteria for the physicians in the selection of the products.

The doctors express their satisfaction with the quality of *Village Herbs* and believe that GMCL products have proved to be effective. This vision is also generally shared by the patients. The products that are most popular among physicians are the cough syrup, the headache balm, and honey.

A doctor expresses his point of view regarding the headache balm: *"GMCL balm is a very good product. It costs the same as Amrutanjan*[5] *but it has lesser side effects like dark pigmentation that is seen with Amrutanjan and it is also more effective. It is as fragrant as Amrutanjan."*

The **second** criterion in the selection of medicines, adopted by **physicians,** is its **price**.

The doctors generally consider the socio-economic background of their patients and select different types of brands accordingly. Brands like Zandu and *Village Herbs* are more affordable for middle-low class patients, whereas Himalaya is a more expensive brand. Nevertheless, it seems that the patients do not consider the price as a major constraint; if they consider a medicine to be effective, they accept to pay more. The typology of patients interested in Ayurveda is the following: they are quality minded and the main criterion in the selection of ayurvedic medicines is their efficacy. They are usually young people, although not always, and they generally belong to middle class.

The doctors affirm that GMCL products are able to combine good quality with affordable price. They agreed that if there would be a slight increase of price in GMCL products (around 15–20%), this would not affect the willingness of their patients to purchase them.

Medical Shops

When selecting the products, the **medical shops** are more sensitive to **profits margins**.

Some chemists ask for a higher margin. According to them, GMCL should increase the selling price, in order to allow them to obtain a higher margin of profit (Mr. Pradib, pers. comm.).

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[4] The doctors interviewed have been Dr. Chitakrisnan, Dr. Neelakanda, Dr. Sundari, Dr. Vasundhara Bhupthi, and Dr. Surekha Prakash. They are all based in Bangalore.

[5] A popular headache balm available in shops.

The **brand** and its popularity also represent an important element for the shopkeeper, due to its capacity to enhance the sales; if the clients know the brand name, they are probably encouraged to purchase the product. As a shopkeeper underlines it: "*people don't buy GMCL products because they are not branded and not packaged well.*"

In several medical shops, brands like Himalaya are kept in the forefront because their sale allows better margins than GMCL and because they are eye-catching for the consumers due to their popularity.

Pharma Enterprise

The **pharmaceutical enterprises** that deal with GMCL (Himalaya Drug Company, Natural Remedies, Om Pharma, and Samil Labs) are generally medium/big in size and are based in India. Their market target is generally national but in some cases they export also to overseas countries (mostly Europe or US). The raw herbs supplied by GMCL are manufactured to obtain a final product (herbal medicines, cosmetics, nutraceuticals) or semi products (extracts).

The enterprises show satisfaction with GMCL quality. The quality is seen as a consequence of the manners in which the raw herbs are selected, harvested and dried. These factors influence the efficacy of the medicine obtained from the crude herb. Himalaya Drug Company has in particular emphasized this aspect. According to this company, the concept of quality is broader than just the quality of raw material supply, and it includes ecologic sustainability and ethical concern for the development of local communities.

Himalaya stresses on how these elements are important if the company plans to expand its exports in Europe and in United States. In the case of Ompharma, the General Production Manager recognizes but does not emphasize to a great extent the quality of GMCL supply. According to his point of view, the quality of traders is also adequate and is able to meet the company's standards. In this case, the company seems to be more concerned with the price rather than the quality of the raw material. The capacity of GMCL to supply at a lesser price has been emphasized by almost all the enterprises. All the companies interviewed have also declared their satisfaction with GMCL for its capacity to deliver on time and honor its commitments.

6.3.2.2 Rural Market

The petty shops and restaurant/hotel owners are mainly sensitive to quality and price, when selecting their products. In rural areas, these are the factors that are mostly valued by the consumers. There seem to be no difference in the perceptions of both rural and urban final consumers, in reference to the quality of the product. Although the constraint of the price is more significant in rural areas, the villagers attribute a greater importance to the effectiveness of a medicine than to its cost.

This could find its logic in an economic consideration; as being ill compromises the capacity of a villager to work, and therefore, to gain his living, the rural consumer prefers to "invest" in a "good" (effective) medicine in order to recover promptly.

As it has been pointed out in the first part of this study, the main difficulty for GMCL to penetrate into the rural market is attributable to cultural/ideological constraints. Because of the over faith on allopathic ("English") medicine, the villages associate it with positive connotations (*'effective,' 'scientifically substantiated,'* '*modern,' 'valuable'*). As traditional medicinal knowledge is dwindling in rural areas, the villages are not aware or appear skeptical towards alternative therapies. Paradoxically, in B.R. Hill, this is especially true for the tribal communities living in the forest areas.

The clash between the allopathic and traditional medicinal systems is clearly expressed by a folk healer: *"When people go to allopathic doctors for their problems and are not cured, they approach us. However, allopathic doctors dissuade people from going to us. They ask the people if they have got some lab reports to substantiate our claims."*

Shivakumar, a local leader from Umlalli, points out: *"People accept Allopathy because it is advertised well, lot of investment goes in to promoting it and the Government promotes it. Therefore, people decide that allopathic medicine is the best. When we give awareness to people, around 40% accept the theoretical foundations of Ayurveda, but of these, 30% are in a dilemma when it comes to purchasing, but only 10% purchase it willingly."*

In reference to the perceptions of villages on the different systems of medicines, it seems here pertinent to analyze the role of folk healers:

- Up to which point are they an institution in the village health care system?
- What has been their role in relation to GMCL activity?
- What should be their role to promote shift the villagers perceptions towards herbal medicine and GMCL products?

It is evident in many villagers that the role of local healers in reference to the local health system is dwindling; the skeptical attitude of the patients is a new problem confronting the practitioners of ethno medicine. After getting some basic education and experiencing the capacity of modern (English) medicine to impart speedy relief, the villagers are more skeptical towards the capacity of ethno medicines practices. The villagers generally show preference toward the modern curative centers when afflicted by serious ailments, and are satisfied with ethnomedicine for the treatment of minor illnesses.

A folk healer from Sevayoor explains: "*Usually people first go to an English doctor and take an injection by paying money. But this medication takes money. So they, usually poor people, come to us only if they have no money. However, since these medications are effective for treating minor ailments, they come to us again".*

Once ethnomedicine was reduced merely to the treatment of minor illnesses, it lost its prestigious value and popular appeal as an efficient medical system.

Although we could question whether and to which extent the folk healers are currently able to influence the villagers in their health decisions and health behaviors, their role in the GMCL initiative should be more carefully considered. A folk healer explains: "*Surely youngsters will take up this profession once they are convinced that they can earn money but they first need to be convinced about the medicines and then they can start prescribing to others. This was how I started prescribing them. To convince others, I started prescribing them for minor ailments and because the medicines worked 'automatically,' people were convinced.*"

The folk healers have mainly been involved in the documentation of their traditional knowledge at the beginning of GMCL activity. Their role has been marginal since then. The degree of acceptance and interest of folk healers towards GMCL products may vary; the folk healers have their own remedies, prepared with fresh ingredients, and they may be willing to stick to them.

Nevertheless, a positive judgment of folk healers in regard to the GMCL medicines would facilitate a build up of trust among villagers towards GMCL products and enhance their acceptance. Emblematic is the case of Maddur village. In this village, Narasimaiah, a local folk healer, has played an important role in promoting the use of medicinal herbs. He affirms: *"When patients come to me, and most of them are known to me since many months, I give them medicine for about three days. They then realize the importance of the medicine and come back for more… People usually go for English drugs or injections but in emergency situations, so people come to me and if I am successful in treating them, they continue to have faith in me. I think herbal medicine has a good future."*

This folk healer, who was convinced on the efficacy of ayurvedic products, used a combined approach between freshly prepared remedies and Ayurvedic drugs he used to purchase himself and distribute free of cost to the villagers.

Narasimaiah affirms: *"One day, when I was coming from this village, I met this person who was having the herbal medicines. Since, I was interested in folk medicine, I talked to him and took his number. I later met him and purchased Rs 100 worth of medicines. Now this medicine that is there before me is priced 70 Rs, but I give it freely because it is very effective in removing bone and muscle pains. It is a hobby with me just like collecting coins. …….Since the past three months I have been giving GMCL products along with the herbal medicines I myself prepare. These readymade preparations are more useful in certain conditions like a wound on the leg. In such cases I need not take the pain of preparing the medicine myself. I have used them on myself earlier and having found them effective, I am giving them freely to others."*

The FRLHT has developed a partnership with the folk healers during these few years. This partnership could be further expanded and could consist of training activities and other initiatives that increase the awareness of Ayurvedic medicine among the villagers.

The same folk healer affirms: *"A friend of mine who is a folk healer and I, have made an association to promote natural medicines. We also teach village people how not to be fooled by superstitions like possession by devil, or like the effects of a*

cat coming in between and how people take them for a ride if they are not careful. In this way, we clear their superstitions."

An increase in the awareness of the villagers on the importance of using Ayurveda as an effective and side- effect free form of treatment is necessary in order to promote GMCL products. A sale representative from Minitankulam affirms: "*Because the villagers don't know about side effects, they are happy with English medicine... they say if you take English medicines diseases are cured in one day... but what will happen next?"*

This could be done through the organization of workshops and training activities at village level and could involve folk healers, local NGOs and other local organizations.

At the moment, there seems to be some difficulties in establishing long-term partnerships with NGOs. Some of them, after having declared their interest in inserting the GMCL initiative into their health programs, withdrew. Nevertheless, the strengthening of these partnerships could be a way forward to promote GMCL products in rural areas and efforts should be made in this respect.

In numerous villages, the chemist's shops exclusively sell allopathic products. The Ayurvedic medicines are often just sold at *taluk* level so that GMCL products sold through the sales representatives represent the only selling channel. An increased awareness towards herbal medicine among the villagers would be essential to take advantage of this factor and to expand the market penetration.

As a local leader has pointed out: *"giving more and more information to people in every village regarding Ayurveda and its uses is very important. Awareness and advertising have to go hand in hand…. We need to motivate them. ...If we can motivate more people, money will come automatically."*

Concerning the factor of price, GMCL products have been considered "acceptable" by the majority of the sellers and final consumers. In tourist areas, such as B.R. hills, the owner of petty shops and other commercial activities have emphasized a possible indirect correlation between price and sales. Their customers are mainly tourists from the cities who belong to the middle class and express a growing interest in Ayurveda. According to some shopkeepers, these customers would associate higher price with higher quality and would be ready to pay a greater amount of money for GMCL products if the packing would be more attractive.

The different typologies of GMCL customers have expressed different visions concerning the factors to which they attribute value in the purchase of GMCL products. Among the pharmaceutical enterprises, physicians, and final consumers (both urban then rural), the common perception is that the quality and price are the most important factors in the selection of products. On the other hand, the owners of the medical shops are more profit oriented. Criteria, such as profit margin and brand popularity, are the predominant factors in their selection.

Concerning the use of the term "quality," a distinction should be made between the meaning attributed by industry and the one attributed to physicians and final consumers. The enterprises consider the quality as strictly related to technical

process (manners in which the raw herbs are selected, harvested and dried) and to the traceability of the plants (security on their origin). On the other hand, the physicians and the final consumers associate the quality with the "efficacy" of the product.

Although difficulties in dealing with medical shops are met, GMCL, for its combination between quality and price, is able to meet the expectations of its other customers.

The general performance of GMCL, in terms of its capacity to supply in time and to honor its commitments, has been emphasized.

6.3.3 Other Forms of Product Promotion

6.3.3.1 Urban Market

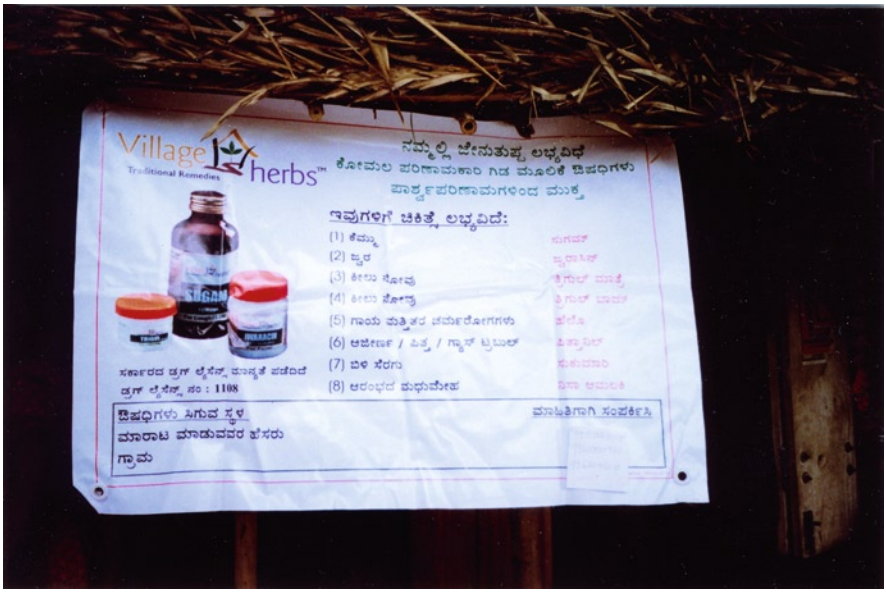
In urban areas, the promotion of GMCL products is mainly carried out through sales representatives who approach the physicians and the medical shops. Other forms of promotion used by the company are represented by advertisement in mass media (although this strategy is faced to high costs and it is sporadically adopted) and the organization of Ayurvedic medical camps.

The limited number of sales representatives (just three) is one of the main current constraints in the promotion of the products. On average, a sale representative has to promote GMCL products in 200 medical shops and with 15–20 doctors. If we consider that every sale representative cannot visit more then 8–10 doctors/shops per day, and that he needs to contact them every fortnight on an average, we can have a clear picture of the difficulties that they face. At the moment the selling channels market coverage in Bangalore of GMCL is around 10% for the physicians (50 ayurvedic doctors on a total of 500–600) and around 12% for the medical shops (600 medical shops on a total of 7,000).

6.3.3.2 Rural Market

GMCL products, in rural areas, are promoted through several strategies, such as local markets, radio advertisements, banners, etc. These forms of product promotion are especially used in rural towns. The visibility of GMCL products is attained through posters displayed outside the shops seems to be quite effective and often catches the attention of passersby and trigger their curiosity. In restaurants and small hotels, GMCL product promotion is done by visibly displaying the products, generally close to the counter (see photo 6.3). This is done on purpose; as the client approaches to pay, his attention is caught by the products. The promotion of the products is generally based on the capability of the owner in convincing the clients.


Village herbs™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Traditional Remedies
ನಮ್ಮಲ್ಲಿ ಚೇನುತುಪ್ಪ ಲಭ್ಯವಿದೆ
ಕೋಮಲ ಪರಿಣಾಮಕಾರಿ ಗಿಡ ಮೂಲಿಕೆ ಔಷಧಿಗಳು
ಪಾರ್ಶ್ವಪರಿಣಾಮಗಳಿಂದ ಮುಕ್ತ
ನಾವುಗಳಿಗೆ ಚಿಕಿತ್ಸೆ ಲಭ್ಯವಿದೆ:
(1) ಕೆಮ್ಮು
(2) ಜ್ವರ
(3) ಕೀಲು ನೋವು
(4) ಕೀಲು ನೋವು
(5) ಗಾಯ ಮತ್ತಿತರ ಚರ್ಮರೋಗಗಳು
(6) ಅಜೀರ್ಣ / ಪಿತ್ತ / ಗ್ಯಾಸ್ ಟ್ರಬಲ್
(7) ಬಿಳಿ ಸೆರಗು
(8) ಆರಂಭದ ಮಧುಮೇಹ
ಸರ್ಕಾರದ ಡ್ರಗ್ ಲೈಸೆನ್ಸ್ ಮಾನ್ಯತೆ ಪಡೆದಿದೆ
ಡ್ರಗ್ ಲೈಸೆನ್ಸ್ ನಂ : 1108
ಔಷಧಿಗಳು ಸಿಗುವ ಸ್ಥಳ
ಮಾರಾಟ ಮಾಡುವವರ ಹೆಸರು
ಗ್ರಾಮ
ಮಾಹಿತಿಗಾಗಿ ಸಂಪರ್ಕಿಸಿ


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Another way of selling GMCL products is through weekly markets. This seems to be a quite appropriate place to promote medicines. A sale representative from Kallupathy village affirms: *"I am able to sell a good quantity of products in the weekly markets. The villagers come and ask me about which medicines are present and what will be cured by them."*

In rural villages, the promotion is mainly done through "mouth to mouth" communication, and relies on a network of proximity and mutual help that is well established in rural villages. The villages that have had good results in using *Village Herbs* products recommend them to other members of the community. A sale representative from Kallupathy says at this respect: *"The villagers do not buy immediately because of their suspicion… They have to know the experience of people, around at least 10 of them before they decide to buy the medicine. They should tell them that it is nice to buy it."*

This promotion mechanism appears to be effective, as several villagers have pointed out. A villager from Kurayur affirms: *" I got to know about GMCL products through my neighbor. I was suffering from chronic joint pain and I was in distress. One day I was complaining with my neighbor and she suggested using*

GMCL products. I have felt much better since then and I have stated using other medicines such as cough syrup. After my positive experience, I recommend GMCL products to my friends and to the other villagers."

The sales representatives also confirm the effectiveness of this promotion strategy: *"There has been an increase in your sales if compared to last year. It is around 10%. This has been achieved without any sort of advertisement such as banners. This has been possible only by mouth-to-mouth spread of this information."*

New ways to promote the products should be found. A sale representative in Kallupathy explains the system followed by some of them: *"We distribute pamphlets through newspaper boys. When people read and come to know of these medicinal herbs, they come to us and buy them. If they find them useful, they spread the message to others."*

GMCL promotion activity seems to be effective and targeted to the different types of consumers that it aims to reach. An appropriate differentiation has been made between the marketing strategies used for the urban and rural markets.

In the first case, the use of sales representatives is important to create a personalized relationship between the seller and buyer. Pradeeb, a sales representative at GMCL, stresses the fact that elements of trust and human bonding are essential to promote the products among doctors and owners of medical shops. Frequent visits and the genuine understanding of the issues and problems faced by the clients can foster these linkages and increase the performance of the promotion activity.

In the second case, the linkages of proximity and the social network, which are particularly thriving in the villages, have constituted the pillar of the promotion activity.

The sales representative, who are local members of communities, are familiar with the villagers' needs and beliefs, are locally accepted and have, therefore, an increased negotiation power.

The promotion strategy followed by GMCL results, therefore, in effective targeting of the different market segments and in profiling its customers. The major constraint pertains to the limited financial and human resources available for the company.

6.3.4 Considerations on the Promotion of GMCL Products

6.3.4.1 The Packaging

The importance of packaging as an instrument to promote the sales has been emphasized by some physicians and sale representatives. A more attractive package could be useful in conveying the image of quality inherent in *Village Herbs* and could increase the willingness of the consumer to pay a higher price, especially in urban areas. GMCL products should have two different packages. A differentiation in packaging should be done between products sold in rural and those sold in urban areas.

Different packing forms (slides, boxes, etc.) could be designed in order to meet the different needs of the customers. For instance, the packing form in slides would

allow the doctors and the chemists to sell smaller amounts of medicines to the patients if they wished to do so. This kind of packaging could be useful in the rural area, where the price could be a concern.

Some of the doctors who were interviewed asked for a bigger size of packets. Currently, the maximum quantity in every packet is 30 capsules. For some of these medicines, the quantity prescribed is three times per day, so that the packet will last for a short time (approximately 10 days). As the Ayurvedic cure needs more time to be effective in comparison to the Allopathic one, a protracted administration is required. Bigger packets could be useful in urban areas. Here, people are probably more interested in purchasing bigger packets, so that they can store the medicines and avoid frequent visits to the chemists' shop.

6.3.4.2 To Increase the Visibility of the Products

The visibility of GMCL products is essential and should be enhanced. Yet, the marketing activity is faced with financial constraints of the company. One promotion strategy, which is not very expensive, could consist in placing stickers in the doctor's waiting rooms. The stickers could briefly present the company and focus on a product or two in particular. We have observed that in a waiting room of a physician, there were several stickers to promote different Ayurvedic products of some companies. These stickers were from Himalaya but also from little companies, producing no more then 10–12 products.

Another way to promote GMCL products among doctors and consumers could be through the increase of free Ayurvedic medical camps. This kind of initiative has already been carried out and has been defined by a doctor as *"very successful."* On these occasions, the patients and other people who are interested in Ayurveda could try GMCL products and gain better insight into them. Some leaflets with a presentation of GMCL and of its products could also be distributed.

The promotion of the medicines among the physicians through sampling or small gifts should be incremented. At the moment, limited samples are given to the doctors. Doctors have emphasized that testing the medicines and realizing their efficacy before placing a bigger order is important to them.

Another relevant aspect to increase the popularity of *Village Herbs* pertains to **ethical considerations**; doctors seem to be aware of the importance of sustaining an initiative that is socially useful, such as the one involving the development of local communities. GMCL is promoting "fair trade" due to equitable benefit sharing compared to exploitative open markets. Stressing this aspect among the physicians could establish leverage in promoting GMCL products among them, and ultimately among the patients.

It is important to **increase the range of GMCL products.** Generally, even the small companies have around 10–15 products to offer their customers. The fact that GMCL commercializes in a limited number of products does not help the brand to become popular among consumers.

Increasing the number of medicines available would also allow to cure a greater amount of patients in rural areas. As a sale representative points out: *"The fact is that we have only 9 medicines. Therefore, people can get a cure for only a limited set of problems. If we had a cure for more disorders, the percentage of people that would have come would have been more."*

Some doctors suggested a few products that would be sold quite easily (skin, derma products, drugs for respiratory problems etc.).The new products could not be just drugs but also nutraceutical and cosmetics (ex. dermatological shampoo, soaps, etc.). The physicians also stress the fact that patients with chronic diseases are particularly interested in Ayurvedic treatments. New medicines for this market segment should be produced. Currently, a medicine for diabetic patients is available with *Village Herbs* but the range of these products should be increased. This would allow the sales representatives to promote and sell more products at the same time and increase the sales turnover.

6.4 GMCL Activity: Performance Assessment and Future Perspectives

According to a general estimate of the physicians and shopkeepers in the last few years, it has been observed that there is an increasing interest in Ayurveda. This trend has been confirmed by pharma enterprises, which have emphasized the constant growth in the segment of herbal products.

Despite the increasing competition of other enterprises, this scenario seems to provide GMCL with opportunities for expansion, especially in the urban area. The key issue is what could be the comparative advantages that GMCL can offer to its consumers.

For its **good combination between price and quality**, GMCL products could increase its presence in the market. Although the price of both raw material and final product is considered to be affordable and convenient by the consumers, this factor in itself is not enough to establish GMCL in the herbal sector. An essential element is the **quality**. Although the quality of GMCL products is not fully recognized by the market at the moment, it constitutes the leverage for its progressive establishment in the forthcoming future.

Thanks to the support of partners such as the FRLHT and CCD, and to the fact that GMCL works in close conjunction with the primary suppliers, the quality of GMCL products is ensured throughout the whole chain, from the collection of raw material to the production of the final product.

In reference to the **raw material**, one of the comparative advantages of GMCL, if compared to the traders, is its ability to assure the identity and the traceability of the plants supplied. This is an essential aspect for the pharmaceutical enterprises that are quality oriented.

Identification of plants in trade is complicated by the fact that there is no reliable system of matching trade names to botanical names. In the trade, a species is known by its local name, which can change from one market to another, or from one region

to another. A species that is identified by a particular name by the collectors might be traded under a totally different name. On the other hand, the same trade name may be used for more than one species, often representing a set of species belonging to the same genus or including very different species used for similar purposes.[6]

GMCL has been recording and filling passport data sheet (PDS) along with every dispatch. The PDS records information regarding the material being dispatched, e.g. place of collection, time and age of the plant at the time of the harvest, physical and qualities parameters.

The gatherers have also developed a Good Collection Practices (GCP) methodology and training manuals in Tamil and English with the guidance of American College, Madurai, and the FRLHT during 2001–2003. This promotes three strategies:

- Collection of only the mature parts at maturity timing to get the best quality, which also provides optimal quantity and maximum price.
- Collection using less damaging methods, for example, hand plucking instead of sickle cutting.
- Proper post-harvest processing: drying, weeding, grading, packing, etc.

In reference to the **final product**, GMCL is able to follow Quality Control (QC) parameters. Currently, there is no organization or governing body in India that certifies that a product is "labeled correctly." Without proper QC, there is no assurance that the herb contained in the product is the same as what is stated on its outside label. With the identification of plants by laboratory analysis carried out in conjunction with the FRLHT, the consumer can be sure that the right plant is used.

There are various certification systems that can be applied to different stages of the production of *ayurvedic* preparations. The World Health Organisation (WHO) has prescribed Good Manufacturing Practices (GMP) as an indicator for certified products: GMP could be applied to the processing and production of ayurvedic formulations.

Through the support of FRLHT, GMCL is able to follow Good Manufacturing Practices to ensure that medicinal products are consistently produced and their quality standards are maintained. This can represent an important advantage of GMCL when compared to other enterprises in the herbal sector. As we have seen, the Indian ayurvedic market is characterized by a large number of small companies and other unlicensed manufacturing units. Quality control cannot be assured for these enterprises. Currently, only a few manufacturers in India adhere to complete QC and Good Manufacturing Practices, including microscopic, physical, chemical and biological analysis.

For its combination between price and quality, the final products of GMCL can effectively target the segment of middle-low class consumers. It is though the

[6] For instance, for the trade name *ashok* there are two botanically different species, *Saraca indica* (syn. *Saraca asoka*) and *Polyalthia longifolia*. Similarly, for the trade name *chirayata* the two botanical species are *Andrographis paniculata* and *Swertia chirata*. Another example is the name *safed musli*, which traders assign to a variety of species including *Chlorophytum borivillianum* and *C. tuberosum*.

promotion of its products to this kind of market segment that GMCL will be able to increase progressively its sales in the future. The selection of physicians as principal selling channels is effective in this respect and can reinforce this idea of quality in the consumer.

As a supplier of raw material, GMCL should strengthen its business partnerships with bigger enterprises and in particular with those that are export-oriented. As these enterprises deal with more regulated markets, they could attribute more importance to quality and less to price when choosing their suppliers. The small buyers are more concerned with the reduction of their supply costs and not always ready to recognize the quality of raw material.

The fact that GMCL is able to assure the correct botanical identity of the herbs and their purity and their traceability, has been stressed by Natural Remedies. The Director of R&D attributes a great importance to these factors and considers them crucial for the efficacy of the final product.

The pharma enterprises are well aware of the problem of adulteration in market samples, and consider it to be one of the greatest drawbacks in the promotion of herbal products in India. The problem of adulteration and altered efficacy is crucial, as it can undermine the credibility of the herbal medicine sector.

Dealing with GMCL has allowed the companies to reduce this risk. As GMCL can benefit from technical support of the FRLHT, the correct taxonomic identification of the different species before they are processed for drug manufacture.

Further efforts should be made to target enterprises that demand environmental, social equity, and high quality standards for their products and that are ready to recognize and award GMCL efforts in this respect.

As Himalaya is planning to increase its presence in international markets, it aims to introduce ecolabeling and sustainability certificate on its products at a future date. This can allow the company to get better prices. The market value for certified products would be greater if the industry could get sustained supply. So, while overall volumes of plants harvested under sustainable management would likely be lower, the price and market access would be enhanced.

This kind of eco-friendly trade is also growing in the developed country herbal markets, and beginning in Indian cities as well.[7] As Himalaya aims to strengthen the commercial relationship with GMCL, it can help the latter to obtain quality certification for the raw herbs supplied.

The fact that the *Sanghas* have developed a recording system of collection areas, habitat type, timing, methods, for the species supplied can facilitate to issue "eco-friendly" certification, or cross-check its veracity by independent experts. Similarly, this record keeping system can help in getting the cultivation products

[7] The first few cases where a private producer has sought certification were reported in 2001. Two of these pertain to bamboo plantations and the third to *Acacia nilotica* plantations. Teddy Exports, a company based in Madurai, which exports wooden products (such as body massagers) to Body Shop International Plc, has sought independent Forest Stewardship Council certification from Soil Association, United Kingdom. The company's wooden products are produced using *Acacia nilotica* wood obtained from tank foreshore plantations.

labeled as "organic" since cultivation in this rain-fed area has been always free from chemical inputs for fertilizer or pesticides.

Currently, there is a form of certification for organic crops that is called Participatory Organic Guarantee System (PGS), which has been studied and worked out by Ron Khosla, a FAO International Consultant on Organic Certification Systems. This form of certification can be given by any respectable NGO, accredited agency or agricultural University and helps in reducing the costs. In the next future this kind of certification system could be made available for medicinal herbs also. This could be a way forward for GMCL in terms of quality recognition by the buyers.

Finally, in order to create a better environment where the quality of GMCL products could be appreciated and valued, the legislative framework and its implementation should be improved.

At the legislative level, quality controls and standards constitute an area where policy making is still in progress. The Drug and Cosmetics Act of 1940 was amended in 1964 to include Ayurveda, Unani, and Siddha, and provides for a limited set of controls over the production and sale of traditional medicines.

However, there are difficulties in implementing the Act. The problem seems to be that a universally recognized setoff quality control standards has still not been developed for the preparation of herbal drugs. This poses serious challenges as the herbal medicines often contain a number of constituent plants, unlike the single principle allopathic medicines contains. Quality standards and guidelines would by necessity differ from those for allopathic medicines. Some of the unique aspects of traditional medicine preparation that would need to be considered include specific means of identifying and collecting constituent plants, including ecologic origins, cleanliness in processing, etc.

6.4.1 Future Challenges

Being an enterprise active in the herbal sector, both as a supplier and as a final product producer, GMCL has to face several challenges. In particular, we have emphasized the issues pertaining to ecologic conservation, land availability, and cultivation, which we believe have a major strategic importance in the future development of GMCL model.

6.4.1.1 Biodiversity Conservation

Ecologic constraints may pose challenges to the future development of GMCL as a supplier of raw herbs. The continuous exploitation of several medicinal plant species from the wild (Kala 2003), and substantial loss of their habitats during past 15 years (FAO 2003), has resulted in population decline of many high value medicinal plant species over the years (Kala 2003; Ghimire et al. 2005; Silori and Badola 2000).

Of the around 500 medicinal plant species used by the contemporary *ayurvedic* industry, around 80% procured from wild areas, mostly notified as forest land (Rawat and Uniyal 2004; FRLHT 1997; Uniyal 2000).

Currently in domestic trade, it is not compulsory to show the source of origin of the plant, whether it is cultivated or collected from the wild (Samant et al. 2002; Planning Commission 2002). Since the demand for medicinal plants derives from the demand for herbal medicines and related products, and the majority of the ayurvedic raw material consists of medicinal plants, the growth of Ayurvedic industry will consequently result in an increase in the demand for medicinal plants. This will put an additional pressure on the medicinal plant sector to provide specific quality raw material for the growing industry.

As the procurement manager at Ompharma has emphasized: *"Right (right kind and right quality) and timely availability of raw material is going to be a crucial factor if not, one of the biggest problem that herbal industry is going to face in the forthcoming years."*

A further threat to conservation derives from the fact that many people who have no experience or knowledge about medicinal plants are becoming involved in their collection and have gradually dominated the scene in many forest areas. These casual laborers harvest medicinal plants in the most unsustainable manner. For the trader, this arrangement is more profitable than buying from traditional herb gatherers since the trader only pays a minimal wage, whereas if he bought from the local people the price he paid would have to reflect (albeit a small proportion of) the value of the plants (Planning Commission 2000).

Many studies have already addressed the problem of overharvesting, and economic scarcity of medicinal plants in relation to the demand from the pharmacies in India.

A study by Schippmann et al. (2002), using the real price increase as a proxy of relative scarcity, reaches the conclusion that many plants are getting extinct in Indian forests. There are various medicinal plants that the firms in the country are getting from the outside, since they are no longer available in India. This calls for urgent conservation measures. If the current, uncontrolled collection of medicinal plants from the wild is not regulated, many species will soon disappear from the wild. It is, therefore, of crucial importance to rural communities that information on the appropriate methods for cultivating medicinal plants is disseminated and that training is provided on sustainable harvesting methods. On-farm cultivation of identified priority species by traditional herbal practitioners or the establishment of ethnobotanical home-gardens might be one of the most viable ways to ensure availability, sustainability, and proximity of medicinal plant species that have become rare and require traveling long distances to collect them. However, plant cultivation by the practitioners is often constrained by the lack of appropriate technologies, as well as cultural beliefs (Shackleton et al. 2002). There is, therefore, a need to train the herbalists to use cheap and appropriate propagation techniques for medicinal plants, so as to sustain supply. Conservation programmes that would involve cultivating medicinal plants should be carried out at the grassroots level and should take into account the cultural context and beliefs of the societies (in some countries, e.g. Kenya, cultural beliefs impede people from cultivating the plants, such as the belief that 'cultivating medicinal

plants is equivalent to inviting diseases into the family'), in order to avoid to a top-down approach that imposes a Western conservation model on indigenous cultures.

6.4.1.2 Cultivation

Indeed, the option of cultivating medicinal plants finds favour with the pharma enterprises who have been interviewed. All the interviewees have expressed their interest in cultivation rather then collection from the wild. Both wild and cultivated plants are used at the moment but the interviewees affirm that cultivation is advisable because it ensures to obtain a final product of a better quality. Indeed, for the plants collected from the wild, consistency in quality cannot always be guaranteed. According to their point of view, the cultivation of medicinal plants under appropriate environmental conditions will provide better development of plants owing to improved conditions of soil, pruning and control of insect pests. Cultivation also permits better species identification and increased prospects for genetic improvements.

Nevertheless, the practice of cultivation presents its own intrinsic difficulties. Medicinal plants are mostly low priced items and margins are low. Cultivation is only competitive with respect to few species. Moreover, fluctuations in procurement price, due to the instability of market demand, are quite common.

One of the main factors that could prevent smallholder producers from taking up cultivation of medicinal plants is the high risk involved (KIT 2004). Many medicinal plants can be harvested only after 3 years or more. As most farmers are poor, have small landholdings, and lack credit, they cannot wait so long for returns. Therefore, they could be reluctant to convert a significant part of their land to medicinal-plant production.

The cultivation of medicinal plants is also a comparatively new activity, and reliable cultivation technologies and other inputs are yet to be fully developed. Up to which point will the farmers be ready to engage themselves in an extensive cultivation? Would they consider it to be profitable enough?

Another constraint for cultivation is represented by land tenure. As GMCL is exclusively working with small farmers, it is not in a position to supply bulk quantity through cultivation. The land possessed by the farmers is meagre (2–5 acres). Of this, the land designated for medicinal plants is currently even less (1–1.5 acres). As land is limited, farmers face a dilemma when it comes to decide which crops to cultivate. Will the farmers be willing to shift from cultivation of food crops to that of herbs? How will they evaluate the associated risks?

In the past, large-scale cultivation has remained restricted to a few species. Past experience has taught that the cultivation of medicinal plants is not necessarily remunerative.

Another element that needs to be pondered upon is that majority of the *Sanghas* (58 out of 72) are formed by gatherers. This choice is targeted at improving the livelihoods of these local groups that are the most indigent and marginalized.

What would happen if GMCL decides to focus more on cultivation? What will be then the role of the gatherers?

Another aspect of cultivation concerns the **know-how.** Do the farmers possess the necessary knowledge and skills in cultivation of medicinal herbs? In order to be successful in cultivation, it is necessary to study the conditions under which the plants flourish in the wild state and reproduce these conditions and possibly improve them.

The pharma enterprises who were interviewed are conscious of the problems related to plants cultivation, which are in their opinion related to:

– Ignorance of cultivation technology
– Lack of knowledge and training in post-harvest handling of medicinal plants
– Lack of quality assurance and standardization of medicinal plants

A partnership with the pharma sector would facilitate the acquisition of technical know-how, as well as better facilities for the treatment of herbs after collection.

Himalaya has expressed its willingness to provide training to its contract farmers through field trials and demonstrations by their team of agronomists. The training, which is already given to some contract farmers with whom Himalaya is dealing, consists of scientific methods of cultivation and organic farming techniques, and includes Good Cultivation Practices. Benefiting from the training and technical assistance offered by companies, such as Himalaya, could be a way forward for GMCL.

It is important to also bridge the lack of know-how in cultivation with theoretical studies. Currently, there are few publications on agro-technology of medicinal plants, which are based on first hand research. The majority of these publications are based on a compilation of secondary literature.

Information on the propagation of medicinal plants is available for less than 10% and agro-technology is available only for 1% of the total known plants globally (Lozoya 1994; Khan 2000; Morten 1993).

In particular, these studies should be focused on:

- The number of techniques to increase the quality and yield of medicinal plants cultivated.
- The standardization practices for the propagation and agronomy of species.

The FRLHT could play a crucial role in this area, by commissioning research that brings out agrotechnological procedures involving medicinal plants that are remunerative and suitable for commercial cultivation.

6.4.1.3 Land Availability

Another constraint is linked to the availability of lands where the collection activities take place. This can have a direct impact on the quantity of raw material that can be gathered.

Currently, the gatherers associated with GMCL collect the herbal raw material from the community lands, such as uncultivated lands, fruit orchards, and wastelands.

Purposefully, the forest areas are not utilized for the collection activity, as this could deplete the natural resources and undermine the conservation efforts.

Although the use of these community lands allows a security of land by default, since there is continued and unrestricted access, the future development of GMCL activity could meet a constraint which is linked to the limited extension of these lands. Some of the villagers interviewed pointed out the difficulties in accessing herbs that grow in limited areas, often located far away from their villages.

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Chapter 7
The Impact of GMCL on Indigenous Communities

Abstract Despite the renewed commitment of the international community to provide economic opportunities for poor women, most observers suggest that the majority of the past and current experience of community enterprise programmes for women has failed to make any significant impact on women's incomes and social empowerment.

The main purpose of this chapter is to assess the impact of GMCL on enhancing economical and social empowerment of women in order to better understand the potential of this particular type of initiative in promoting capacity building and local development. Major outcomes o this research include giving voice and visibility to poor women, identifying their preferences and decision-making needs to poverty reduction and finally, developing culturally-sensitive policy recommendations that consider the multiple dimensions of empowerment.

Keywords Gender • Empowerment • Socioeconomic outcomes • Entrepreneurial activity • Capacity-building

We propose to look into the question of this women's enterprise from two points of view: firstly, its effectiveness to fight against poverty, and secondly, its capacity to trigger off poor women's empowerment.

The study of women's enterprise, such as GMCL, and the ways in which it operates at the grass-roots level, could provide lessons for the creation of gender enterprises more participative and inclusive in their approach to women's needs.

Our endeavour is, therefore, to identify to what extent the model of this community enterprise is economically and socially viable. We also aim to analyse how far this initiative has been translated into an effective process of poverty alleviation for women and in a empowerment process.

In this endeavour, the empowerment of women will be assessed by the number of facets the GMCL approach addresses (economic, social, psychological). This involves an analysis of the possible changes it brings in terms of women's individual

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understanding and collective action, the strength and stability of their organization, the renegotiation of authority it enables at the household and community levels, and the range of objectives it identifies for future action.

7.1 Women Enterprises, Development and Empowerment Processes

In recent years, the term "empowerment" has become increasingly salient in community enterprise programmes for women.

There are various attempts in related literature to develop a comprehensive understanding of empowerment. The term "*empowerment*" has been used to represent a wide range of concepts and to describe a proliferation of outcomes. Pant describes "resources, perceptions, relationships, and power," as the main components of empowerment, and Mueller and Thomas (2001) characterize empowerment as "control over resources and ideology". Resources and agency in various forms and by various names (e.g., control, awareness, voice, power) are the two most common components of empowerment emphasized in the literature.

The concept of empowerment can be distinguished from other concepts, based on its unique definitional elements.

The first essential element of empowerment is that it is a process (Kabeer 2001a). None of the other concepts explicitly encompass a progression from one state (gender inequality) to another (gender equality). Much of the emphasis on empowerment as a process is found in conceptual literature, but this understanding is also beginning to be incorporated into the frameworks of empirical studies.

For example, even as Selsky and Smith (1994)consider autonomy and empowerment to be fairly similar, she argues that the former is a static state—and thus measurable by most available indicators—while the latter is change over time, and not so easily measurable. Kabeer's (2001b) understanding of "choice" comprises three inter-related components: "resources, which form the conditions under which choices are made; agency, which is at the heart of the process through which choices are made, and achievements, which are the outcomes of choices."

Most often these are referring to women's ability to make decisions and affect outcomes of importance for themselves and for their families. Control over one's own life and over resources is often stressed. Thus, there is frequent reference to some variant of the ability to "affect one's own well being," and *"make strategic life choices."* For example, Sen and Grown (1987) defines empowerment as "altering relations of power…which constrain women's options and autonomy and adversely affect health and well-being."

Batliwala's definition is in terms of *"how much influence people have over external actions that matter to their welfare."* Keller and Mbwewe 1991, describe it as *"a process whereby women become able to organize themselves to increase their own self-reliance, to assert their independent right to make choices and to control resources which will assist in challenging and eliminating their own subordination."*

The second element of empowerment that distinguishes it from other concepts is agency; in other words, women themselves must be significant actors in the process of change that is being described or measured (Powell and Friedkin 1987). Drawing mainly from human rights and feminist perspectives, many definitions contain the idea that a fundamental shift in perceptions, or "inner transformation," is essential to the formulation of choices. That is, women should be able to define self interest and choice, and consider themselves as not only able, but entitled to make choices (Kabeer 2001a; Nussbaum 2000). Kabeer (2001a) goes a step further and describes this process in terms of "thinking outside the system" and challenging the status quo.

The importance of agency in the discourse of empowerment emerges from "bottom up" rather than "top down" approaches towards development (Putnam 1993). At the institutional and aggregate levels, it emphasizes the importance of participation and "social inclusion." It is also embedded in the idea of self-efficacy and the significance of the realization by individual women that they can be the agents of change in their own lives (Narayan Parker 2000).

Attempts to increase women's participation in the economic domain are not new. Upon independence from the colonial state, some new national governments were concerned about issues of female poverty and/or harnessing their time and skills for economic development. This led to the introduction of women's training courses and programmes for women's co-operative development in a number of countries in the 1950s and 1960s. Such programmes also often found support from international development agencies, particularly where they were seen as contributing to family welfare and child health.

In the mid-1970s to early 1980s, there was a sudden surge of interest in ways of increasing women's access to income. On the one hand, this coincided with a growing interest in the potential of the newly identified informal sector, as both a contributor to economic growth and a means of targeted poverty alleviation and employment creation. On the other hand, the start of the United Nations Decade for Women (1976–1985) focused attention on women's ability to earn an income as a necessary element of household poverty alleviation and a pre-condition to gender equity. This led to the initiation or intensification of extensive research programmes on women's work and position (Johnson 2005; Narayan 2000). Literature emphasized the efficiency effects of integrating women in development programmes and the costs of not doing so (Martinez 2009).

Although there continued to be widespread diversion of funding for women's economic activities towards traditional welfare projects, there has been in these last few years a rapidly increasing number of women's income generation programmes and projects in many countries (Sachs 1992). These have included both projects and programmes targeted specifically to women and attempts to increase women's participation in large male stream programmes.

Although there were some exceptions, a number of features commonly have characterized these interventions for women. Firstly, they have aimed to increase household income mainly through providing women with supplementary, part-time work, which could be combined with their domestic work. Secondly, they have built on women's traditional skills, or what were perceived as "feminine skills" in

handicrafts and food processing. Thirdly, they have often combined both economic and social objectives. In most cases, the focus was on the formation of separate women's groups, and in some cases, income from production was used for community or welfare activities.

According to these development programmes for women, enterprise development is seen as a particularly important development intervention for women because of their existing high levels of participation in the small-scale sector. Stimulating female entrepreneurship is seen as having important "trickle down" effects on wider poverty alleviation and gender inequality through the expansion of female employment and stimulation of the local economy (Chitsike 2000; Brush 2006).

Recent formulations of the market approach are characterized by a number of basic features related to the wider neo-liberal policy framework of the organizations promoting this approach (Hofmann and Marius-Gnanou 2005). First, the main aim of micro-enterprise development for women is seen as stimulating individual female entrepreneurship following their male counterparts, thus "integrating" women into the economic growth process. Entrepreneurs are assumed to be autonomous individuals (or at most partners and very small groups) who perform a range of functions.

Nevertheless, this approach has been the object of several critics. First, the economic emphasis fails to reflect the very diverse aims and requirements of women entrepreneurs. The analysis of entrepreneurship in terms of high growth and low growth enterprises fails to capture the multiple aims and requirements of women themselves. Many of the assumptions underlying these programmes did not accurately reflect the situation of poor female entrepreneurs. For many women, it may not be so much overall increases in income which are important, but the security of such income and the degree to which they can control it (Hofmann and Marius-Gnanou 2005).

Although some of the potential implications of women's distinctive strategies have been considered in evaluations of micro-enterprise programmes, recommendations have been limited to modification of the economic factors taken into account (e.g. widening the unit of analysis to include women's multiple enterprises), rather than a questioning of the economic framework itself (Mayoux 2006). This still fails to cover other possible aims which women may have in reduction of work time, improvement of their control over income, integration with non-market survival activities, etc.

Second, as a result of the economic, technical, and quantitative biases in policy, there is little consideration of the need for changes in power relations or gender inequality in either analysis or policy. Despite the fact that gender inequalities are in themselves identified as fundamental constraints on female entrepreneurship, they actually receive very little attention in policy recommendations (Minniti et al. 2005). The only concrete policy measures proposed are the provision of micro-level services for women to facilitate their dual role rather than looking at ways of changing macro-level welfare policy or inequalities of responsibility between women and men. Even the inclusion of gender-awareness and conscientization in some programmes is unlikely to succeed without considerable institutional back-up.

Where this is not the case, these programmes merely exacerbate the tendency to put the blame for failure on women themselves.

7.1.1 *Models for Empowerment? Women's Production Groups and Co-Operatives*

A commonly proposed solution to the problems of individual entrepreneurship for very poor women has been the promotion of producer groups and co-operatives. In many societies, there has been a range of traditional forms of co-operation between women. These have included rotating savings and credit organizations, welfare and cultural activities, and also collective production, particularly in agriculture. Post-independence governments, particularly in Africa, attempted to build on these to promote self-help and income generation groups. In the 1980s, many state-sponsored co-operative movements attempted to increase the numbers of women involved in their co-operative movements, and also had a range of schemes for stimulating women's production groups (Mayoux 2000).

In addition to government programmes, women's co-operatives, or community production groups, have frequently been set up or supported by NGOs and national women's organizations. Co-operative development, including for women, was a feature of many early USAID-sponsored micro-enterprise programmes in Latin America (Liedholm 2002).

The rationale underlying the widespread promotion of group production for women has been both economic and social. On an economic level, for women as for men, collective production has been seen as having the potential to increase incomes through pooling of skills and resources, and enabling the use of more expensive and productive technology. The social aspects of collective production have been seen as particularly important for women, enhancing solidarity and the ability of women to overcome other forms of gender exploitation. Producer groups and co-operatives were also seen as having particular benefits for women if they worked together in a common workshed outside the home, because this challenged norms of female seclusion and the unequal division of household labour (Mayoux 2006).

Concerning the issue of participation, it has been noticed in the past programmes that the women with the most time, skills, and resources to contribute to participatory projects are generally those better-off women who are also less subject to norms of gender subordination and family responsibilities. Although there is considerable cross-cultural variation, the evidence indicates these are likely to be unmarried girls and older women past the childbearing age. The former are, however, generally only temporary participants, often mainly concerned (or allowed) with the accruement of skills and experience, which will be useful in marriage. Poorer women generally have very little time, resources, or skills for participatory projects unless they yield a quick and tangible income. These potential costs have generally been insufficiently considered in many participatory programmes.

All the evidence suggests that the experience of women's group production has been very mixed. There are undoubtedly some "success stories." Many small

women's group enterprises have been set up and have been reasonably successful. Some have received extensive outside support. Others have received relatively little and have been largely dependent on the initiative and determination of the women themselves (Mayoux 2000).

Nevertheless, large numbers of women's producer groups and co-operatives have failed to yield a significant income once outside funding has been withdrawn. This is the case with co-operative groups promoted by international agencies following a market approach (See references in Salafsky et al. 2001), government-sponsored co-operatives, and NGO-sponsored co-operatives.

The degree to which a few successful cases will act as an alternative "role model" for other women and hence, contribute to change in wider inequalities needs to be demonstrated rather than assumed.

Research by Mayoux in India (Mayoux 2000) casts some doubt on assumptions about automatic positive effects on gender equality of co-operative production. Even for those women who are most active in the most successful co-operatives, the expected reallocation of domestic tasks and increased status does not automatically occur. It was unclear that collective production in itself had led to any significant changes, which were not already occurring through private sector employment.

Co-operative production did not appear to increase women's control over income any more than other forms of working. For most women, it was unclear that working together in a co-operative production centre had significantly increased their support networks outside the home. Significantly, all the evidence indicates that co-operatives and group production fail to attract the poorest women, except where there is very careful and effective targeting and substantial support (Cheston 2006).

From the literature available, it emerges that extensive training, credit, and marketing facilities have often caused serious problems where they are offered. First, an increase in resources available to co-operatives often means that overly-ambitious organizations are set up. One consequence is that they are unable to benefit from the knowledge and experience that would have been accumulated if they had started out on a small scale. Second, where significant amounts of credit are available, these are often monopolized by middlemen, leading to bribery and corruption of officials. Third, where external marketing facilities are available, particularly through the government, these may create unfair competition for very small co-operatives and production groups, which do not have adequate contacts, may be monopolized by middle-women and middlemen, and/or may offer less attractive prices and terms of trade than the private sector. If the marketing body itself for any reason fails, then all the co-operatives dependent on it also fail, unless they have been encouraged to build up alternative sources of support. These problems are not confined to women's co-operatives, but are exacerbated by the nature of gender inequality.

There are arguably inherent tensions in the promotion of group production which further amplify these other problems. Co-operative organization is, for the most part, a form of imposed participation: outside agencies decide on a particular model and organizational framework (Kantor 2003; Fernando 2006).

There are also potential social costs. There are often problems devising ways of distributing benefits equitably without causing resentment on the part of those who put

in most effort, skills and resources. Co-operative or group formation does not necessarily resolve clashes between workers, resentment over pay differentials, or conversely, a lack of recognition of skill and ability. Problems are especially acute when there are pre-existing social and economic inequalities, and tensions between members.

Women's own aspirations and needs are complex, and often contradictory. Their immediate need for an income can, in many cases, only be fulfilled by challenging entrenched inequalities of which they may be only partially aware and which they may be ill-equipped to challenge, even with the support of development agencies. The more conventional types of projects have often failed because, in their response to women's immediate needs, they have failed to address longer term underlying constraints. Because of the potential costs of participation to poor women, the definition even of these immediate needs, in terms of types of work and work organization, has been biased towards the better-off among the poor.

7.2 Woman Empowerment in Sanghas

Kabeer (2001a) offers a useful definition of empowerment that can be applied across the range of contexts that development assistance is concerned with: *"The expansion in people's ability to make strategic life choices in a context where this ability was previously denied to them."*

We employ this definition as a reference point in the present chapter. Although brief, this definition is specific enough to distinguish it from the general concept of "power," as exercised by dominant individuals or groups. Kabeer's definition is especially attractive because it contains two elements that help distinguish empowerment from other closely related concepts, as discussed in the first part of this chapter: firstly the idea of process, or change from a condition of disempowerment, and secondly, that of human agency and choice, which she qualifies by saying that empowerment implies "choices made from the vantage point of real alternatives" and without "punishingly high costs."

In our present context, empowerment may be defined ideally as a process that people undergo, which eventually leads to changes. Nelly Stromquist (1995), for instance, defines empowerment as *"a process to change the distribution of power both in interpersonal relations and in institutions throughout society"* describes it as *"a process of acquiring, providing, bestowing the resources and the means or enabling the access to a control over such means and resources"*.

Given the above, the term is, therefore, more relevant to the marginalized groups, such as women belonging to indigenous communities.

In analysing the empowerment process of women in GMCL, we shall refer to Batliwala (1994). This author identifies three different approaches: the integrated development approach, the economic approach, and the consciousness-raising-cum-awareness approach.

They are not mutually exclusive and have the potential to be linked with one another. Where (i) and (ii) address the practical needs or material conditions of

women, (iii) addresses the strategic needs or position of women. The consciousness and awareness raising approach has the potential to bring about long-lasting changes in the position of women and also other profound implications.

The formation of *Sanghas,* which constitute the base of GMCL, is "not ultimately a mere economic project but also an empowerment process." The concept aims at empowering women and thus uplifting their families above the poverty line. It is a gradual process resulting from interaction with group members through awareness and *capacity building*.

Building capacity refers to the strengthening of ability to undertake economic, socio-cultural activities, and enhance self-respect. Capacity to undertake economic activities includes ownership and control of productive resources and alternative employment opportunities at local levels. It has been proved that economic empowerment could have a positive impact in other spheres as well such as enhanced social status. Capacity to undertake socio-cultural activities encompasses ability to participate in non-family-group meetings, to interact effectively in the public sphere, to create mutual dependence and to ensure mobility and visibility. Capacity to undertake political activity includes ability to fight injustice, to organise struggles, and to create an alternate power structure at the local level.

Within the *Sanghas* approach, empowerment is embedded at many levels. The impact of *Sanghas* on the various dimensions of women empowerment depends on the backwardness, prevailing cultural practices, and demographic profile of the area.

Gender inequalities are all-pervasive, forming much of the unquestioned backdrop of everyday social interaction in many rural societies (Kantor 2002; Liedholm 2002).

The social status of women is generally defined by their relation to men. Women are seen, both in custom and formal legal systems, as the dependants of men and are subject to their authority as fathers, husbands, brothers, and community leaders. Access to family and community productive resources is generally differentiated by gendered patterns of inheritance and usage (Palier 2002).

Moreover, wider aspects of gender discrimination and the other disadvantages women face make it very difficult for them to enforce what rights they do have and/or to act independently. Women generally have very limited control over cash incomes and very limited scope for saving and investment. Household budgeting arrangements are generally controlled and dictated by men. In some cases, women are assigned the role of manager of particular types of income and particular types of expenditure (particularly, food items and purchases), with men being assigned responsibility for others and enjoying higher levels of their "own money" for luxury items. However, even where women are assigned a decision-making role for the expenditure of the household, their choices are generally limited by wider gender norms regarding appropriate types and levels of consumption for males and females, and particularly by expectations of their own altruism.

Furthermore, the gender division of labour assigns women to productive tasks, which are generally of lower status than those of men and receive lower levels of remuneration (Lelart 2001; Charlier 2005). Many productive tasks are performed on the basis of a gender (and age) division of labour within the household. This

commonly means that men are responsible for the more prestigious tasks, and those involving outside contacts and exchanges of money, while women and children are helpers, performing much of the routine-based, low status work. This division of labour is further reinforced by women's lack of independent access to productive resources, as noted above. Women are responsible for most of the unpaid tasks in reproduction, as well as production. This severely hampers their access to income and their time for any activities outside the household. It also restricts their access to skills, which are not connected with their domestic role.

Constraints imposed by poverty and gender inequality thus operate on many levels, and often mutually reinforce each other to seriously limit the options available for poor women (Evers and Walters 2000).

7.2.1 Economic Empowerment

The status of women is intimately connected with their economic position, which in turn depends on opportunities for women for participating in economic activities (Liedholm 2002; Servet 2006). Women's ability to save and access greater income would give them an economic role, not only within the household but, maybe, outside it as well.

The villagers have emphasized an increase in revenue as the major outcome of the GMCL activity.

A woman, who became a sales representative of GMCL, affirms: *"Before I used to struggle to make two ends meet. I collected a few rupees earnings to get through the day and I depended on my family for anything that I needed. Now I can give my contribution to support my family with my earnings."*

In reference to the raw herbs, the gatherers who were interviewed stressed how their association with GMCL has allowed them to get better prices from those offered previously by local traders. In the past, the villagers pointed out that they had to bear costs of transporting the raw material to the local market. Price fluctuation was a major problem, so that the gathering activity was not profitable for them.

A 40 year old woman from the village of Palavanatham recalls the past: *"Before becoming a member of GMCL, I had to trudge to the towns of Madurai to sell the herbs that I had collected. It was quite a long journey, around 50 Km from my village and I had to go by bus. This was quite expensive. The traders were never satisfied with the quality of my product and used to pay me very little."*

Currently, the farmers, through the intermediation of GMCL, are able to gain higher margins from their sales and to reduce the transaction costs involved in the presence of middlemen. The villagers emphasized how previously the presence of middlemen was reducing their gains from the sale of raw material. The increase of selling price for the gatherers is on average around 30%.

The members of some *Sanghas* still supply few species of plants to the local traders. Nevertheless, their negotiation capacity is increased since when they have become

associated with GMCL. A villager from Kurayur explains: *"We supply 5 herbs species to GMCL. After we have decided to be associated with GMCL, some traders still come to my village and ask us to sell them some herb species. We say that we are not interested, that we have already a commitment with GMCL. They usually insist, some of them are ready to offer even a higher price then the one we currently get."*

As the finished products are being sold through sales representatives, who get a trade commission of 35% on their sales, GMCL has been able to provide the women with an additional form of income. The sales representatives interviewed affirm that the profit on their sales amounts to 20–25%. In tourist places, such as B. R. Hills or in rural towns, such as Sante Marally, the sales amount to an average of Rs 2,000–3,000 per month. A sales representative from the village of Sante Marally affirms: *"Earlier I used to earn around 200–300 Rs everyday. But now I earn up to 1,000 Rs and sometimes, even 5,000 Rs to 10,000 Rs everyday. Further I can also save more now. I am also able to take care of my parents who stay with me. I also give some money to my son."*

The quantum of sales decreases proportionally in the smaller villagers where it amounts to approximately Rs 1,000–1,500 per month. The low income generated by the sales in the villages does not permit the sales representatives to just rely on this activity for their living. In little towns, close to tourist areas, the afflux of clients has allowed some of the sale representatives to open little medical shops (see photos 7.1, 7.2, and 7.3).

The income obtained through GMCL activity is generally invested in buying agricultural materials (fertilizers, seeds etc.) or livestock. About one third of the members of the *Sanghas* were able to acquire livestock and poultry. Goat-keeping

is an ideal activity as grazing is possible in the nearby forest. Moreover, their high prolificacy combined with their ability to breed throughout the year have rendered goat-rearing a highly remunerative activity; it has therefore induced a large number

of poor to take it up. In order to examine the economic impact of GMCL, the income generated from taking part in GMCL activity was collated with the total monthly family income. The contribution of GMCL income to total family income is found to be significant indicating the positive impact of the strategy. In spite of the tendency among beneficiaries to underreport income, most of them stated to have generated a monthly income ranging from Rs 1,500 to Rs 2,000.

After the intervention of GMCL, the villagers are able to increase their savings as a consequence of the reduction of expenditures for medicines. A sales representative affirms: *"if someone has cough I gave her the sugam syrup. If she approaches an allopathic doctor for the same problem, she would have to shell out much money for her consultation. But if she comes to us, they can directly get treated for their problem without wasting much money, especially for older women because the Government hospital is 3 km away."*

The advantage of reducing the expenditures in the household for the purchase of medicine is also emphasized by another sale representative from Maddur. She affirms: *"the problem is that we need to pay 20 Rs to the doctor to get a drug worth 2 Rs. By coming to us, people get free advice and they have to spend money only for the medicine. Further, this venture is not illegal because the medicines are all over-the-counter ones."*

It is remarkable to note that GMCL has been able to enhance local entrepreneurship and employment. A leader from Umlalli explains: *"Our venture helps create job opportunities for women. We do not involve doctors because then our venture will become centralized and money will get distributed. We want to ensure that the local profit is used locally."*

This company, in synergy with other local organizations (such as a micro credit organization called the *Kalasam*), can be the starting point to promote other forms of entrepreneurship at village level.

The increase of the revenue at the household level made possible by GMCL activity has enhanced the saving habit among villagers. This can encourage them to use their financial resources in starting up small business activities, on which they can fall back during difficult times. This could be also done through the support of village micro credit institutions.

Some sales representatives, such as Rajeswari, who have been able to start up their own business activity, represent an example of the reinforcement of local entrepreneurship.

Rajeswari is a young woman in her thirties from a small hamlet close to Sante Marally (Karnataka). For the past 4 years, she has been working full time as a sale representative of GMCL products and she has opened a petty shop in Sante Marally. As her income is on the rise, she is planning to open a larger medical shop in the near future.

One third of the women interviewed, especially the young ones, have expressed their interest in opening their own medical shops in the future. However, in the Utchanendal village, a member of the local *Sangha* pointed out that the sales of GMCL medicines by the sales representatives find resistance from other members

in the village community, especially those belonging to higher castes. The sale of medicines is hindered by the lower social status of sales representatives; the villagers belonging to higher castes are, in some cases, unwilling to purchase medicines or interact with them due to their inferior status.

This can vary from one village to another, based on the differences in social structure that characterize the village communities.

The sales representatives, especially the young ones, see this activity as a way to increase their revenue on the basis of the provisions they can get from the sales. Nevertheless, in the majority of the cases, this consideration is not separated from a conviction that their activity is socially useful to enhance the community health system.

As a sale representative from Elanduri village explains: *"I have associated with GMCL because I want to popularize Ayurveda. Ayurvedic medicines do not have many side effects. What is happening nowadays is that 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."*

It is important to point out that this increase in household income does not automatically mean an increased capacity in women to decide the allocation of different expenses. Women generally only control income with male permission, which may be withdrawn. Women's own cash earnings are often incorporated into these existing patterns of resource allocation rather than radically transforming them. Although women may control some of their own earned income, this is widely variable between cultures, within cultures between different social groups, and even between households within the same family (Taub 1998; UNHCR 2007).

Given the unequal patterns of intra-household income decisions, increases in women's income from taking part in GMCL activity may merely be substitute for male expenditure in family needs, freeing more male income for their own personal luxury expenditure.

Another issue is represented by the delicate link between economic income, participation and sustainability of GMCL activity in the long term. Women's participation in GMCL activities tends to involve work done outside the home in a collective workshed. As noted above, poorer women are generally less restricted in their mobility outside the home because of the necessity to work, and they have generally built up considerable support networks. However, working outside the home in collective sheds often involves further expenditure in time and/or transport, and may prevent them from engaging in other forms of simultaneous production (e.g. looking after livestock in the compound), as well as activities like child-care. Regular work outside the home may, therefore, be possible only where the income gains are sufficient to cover these losses.

7.2.2 *Social Empowerment*

The GMCL model has been successful in producing, inside the villagers wider socio-economic sphere, outcomes other than only economic benefits. This includes an enhanced ***social empowerment process*** for women, notably through the improvement of social status of herbs gatherers, who are generally landless or marginal farmers, and of sales representatives in the villages. The process of empowerment has had as a result of better access to power and resources at the community and household levels, and the creation of women' institutions (*Sanghas* and other informal meeting groups).

For the women, participation in and the decision to be active in the *Sanghas* has often been the first gateway to be crossed and their first empowered step. The fact of taking part in harvesting and commercial activities has undoubtedly enhanced the skills and position of those women who are most active.

These women are often able to use the need to travel to meetings and for marketing as a means of breaking previous restrictions on their movements outside the home and to develop a range contacts outside their immediate family and community. Nevertheless, for most women, this process has not been easy. In many rural societies, attempts to control women's movements outside the home further constrain their autonomy.

A *Sangha* woman in the village of Perunguri recalls *"my husband told me to stay at home and look after the housework, in stead of going and gossiping. If I was late in cooking his dinner after a meeting, I was beaten."*

As the women that participate in GMCL initiative are poor and belong to the lower castes, the pressures at home were further exacerbated by the fact that they were mobile in spaces traditionally reserved for men and in many cases, for upper caste men only. In the initial days, *Sanghas* meetings were hesitantly organized inside members' homes with the fear of reprimand. From inside homes, the women slowly moved out to gather in the *thinnai* (porch), or even in the local temple. Then, it became a common sight to see the women conduct their meetings and other proceedings in the community's public place, the '*Chavady*' of the village.

Becoming a member of the *Sanghas* or a sale representative has increased the social standing of women in the village in a visible manner; the women own and manage their own small businesses, meet a number of people in and outside the village, who value their ideas and contribution.

Social recognition has gradually given way to respect in most villages and the changes most visible in the public domain. This issue of respect and recognition by the village community is a very critical marker of change for the women.

A sale representative called Rajeshvari affirms : *"I was earlier working in a dairy, then in a shop and finally have joined this enterprise. I have become so much self-reliant that I can go to the city alone and sell my wares. Further, earlier I was just some person. But now, people recognize me as Rajeshvari who can treat diseases. I have also improved my knowledge regarding diseases because I have to educate the public."*

For a *Sangha* woman in Sante Marally, her knowledge of herbal medicine has changed her relationship with the landlord. *"I could not enter the landlords house by the front door, but now that I have learnt to use herbs, he calls me 'doctor', and begs me to come to his house."*

A woman from Perunguri, who is a selling representative in her village, says that since she has successfully established her petty shop to sale GMCL products, she is invited to the local Panchayat to give speeches about Ayurveda and traditional remedies. This has increased her reputation inside the community. This woman affirms: *"before becoming a sale representative, I was afraid of talking in from of other people. I was afraid of leaving my house. Now my confidence has increased. Recently I have been asked by the Panchayat members to talk about the products I am selling and to explain the side effects of Allopathy. I would have never thought of being capable of doing that."*

In analysing the social empowerment process of women, the psychological aspects of empowerment should be carefully considered. This component includes the development of feelings that women can act at personal and societal levels to improve their condition, as well as the formation of the belief that they can succeed in their change efforts.

Self-perception, which used to be low, is higher now because of attitudinal change and change in social outlook. The groups have provided a forum for women to express their concerns and articulate their aspirations for change (power within and power with) and enabled them to see and know what is happening outside the house. Several groups have become centres for initiating social action against the dowry system, alcoholism, illiteracy, and divorce. Though some groups have succeeded in improving the extent and levels of political participation of the members, women's active and effective involvement in local planning and decision-making is yet to take place. In spite of several drawbacks, members unanimously expressed the view that some improvement in their livelihood had taken place as a result of their increased confidence and ability to cope with difficulties.

Involvement in cultural activities can go a long way to liberate women from their traditional roles. Their active participation in *Sanghas* has improved their confidence and created an opportunity for its members to meet members of other village organizations.

Active participation in sports and cultural activities, construction of roads and help extended to the sick and the disabled show their better willingness for mutual help and greater commitment to social obligations. The efforts made by some groups in initiating public campaigns against illicit liquor and gambling are worth mentioning.

The extent of empowerment varied with each aspect examined. For example, one third of them felt that their self-confidence had increased considerably. The groups' dynamics enhanced their pride, particularly since they were able to generate income from the economic activities taken up by them after joining the groups. About half of the selected members agreed that their communication skills had improved significantly after joining the groups; but most of them happen to be group leaders.

They strongly agree that they can now participate in non-family meetings, interact effectively in the public sphere, and enjoyed better mobility.

The example of the small contribution made by members of *Sanghas* out of their limited incomes for the construction of a house for an old destitute widow shows the change that had come about in their social outlook. It is thus evident that empowerment, in terms of social outlook, has been fairly remarkable. The informal discussions we had with them also lend support to this conclusion.

The most important aspect of empowerment, being the change in attitude towards a patriarchal society, was also examined. Their attitude towards gender equity and equality was not found to have been as impressive as it was in the other aspects. They continued to adhere to traditional culture and its associated values. To the question of whether women preferred male dominance in the family and society, half of them answered in the affirmative. A few opted for 'gender balance' rather than 'gender equality.' When asked about gender equity and equality, many of them opted to remain neutral.

Another important issue that we would like to raise is the difficulty in overcoming caste barriers. The interviews 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.

This social and cultural constraint prevents an increase in the participation of women in GMCL activities and limit their empowerment. As among these village communities, the herb gathering activity is associated with a low caste and tribal background; thus, it represents a social stigma. In the village of Thimmapuran (Tamil Nadu), only four villagers are engaged in herb collecting activity. Although the CCD informed the villagers of the possible economic returns of this activity, the villagers have not shown any interest in taking part in the collection of herbs.

7.2.3 Capacity Building in the Sanghas

A range of training programs for women have been organized by the CCD and FRLHT (Foundation for the Revitalization of Local Health Traditions). These activities, carried out in conjunction with local healers and village botanists, involved training on issues, such as processing and marketing of herbal drugs, value addition activities and sustainable harvesting, and collecting techniques for medicinal plants. Savings/credit provision and improvements in marketing skills and networks have also been areas of strategic importance in training, as well as the increase in the capacity of women in selling, and therefore, the increase in their income.

This helped women in recognizing and giving value to their local knowledge of medicinal plants, and has enhanced a process of capacity-building centred on ethnomedicine knowledge. This has resulted in an increased capacity to study, document, and monitor traditional knowledge of medicinal plants and their use, make an inventory of plants and local biodiversity through biodiversity registers, etc. An increased capacity of gatherers and collectors to harvest in a sustainable way, as well as to

master the different agro-techniques and to keep the accounts and records, has also been observed.

The enhancement of the villagers' know-how in this respect has represented a prerequisite for the implementation of GMCL activity. The increase of capacity building in terms of medicinal plants (how to use, to recognize and protect them) that constitutes the result of the previous project, has allowed the future involvement of local communities in GMCL activity. This is the case especially for the activities related to the final products. The villagers who were already familiar with the use and the importance of medicinal plants to enhance their local health system, have shown a greater interest in purchasing and selling GMCL products.

This is particularly evident in the villages around Sevayor (Tamil Nadu), where the creation of nurseries and herbal kitchen gardens in the past few years had already sensitized the villagers on the importance of using medicinal plants.

Through these training activities, especially targeted to women, there has been a gradual passage from a form of *individual* knowledge (mainly possessed by the folk healers) towards a form of *more diffused* knowledge, which involved the women in *Sanghas*. The villages' organizations such as *Sanghas,* can become key players in promoting a community-based health system, and in sensitizing the villagers on the importance of traditional medicine.

Internal and external elements/factors are crucial for the successful functioning of *Sanghas*.

The *internal factors* contributing to group success include homogeneity in membership (members belonging to same income or social strata), the presence of democratic and transparent functioning mechanisms, and the presence of a dynamic leadership.

The *Sanghas,* the organisational base of GMCL, are small informal associations created for the purpose of enabling members to reap economic benefit out of mutual help, solidarity, and joint responsibility. Resolving internal tensions requires considerable skill by members of the *Sanghas* and the CCD field workers. The field observations suggest that some smaller groups manage to overcome these tensions. Besides, smaller size facilitates the decision-making process among members.

The joint liability not only improves group members' coordination and productivity, but also creates mechanisms of cooperation and reinforcement of community ownership, which is a prerequisite of GMCL. Some of the basic characteristics of *Sanghas*, such as small size of membership and homogeneity of composition, bring about cohesiveness and effective participation of members in the functioning of the group (Kabeer 2000; Nussbaum 2000). The *Sangha*, being a grass-roots organization, encourages the women to come together, to analyse their issues and problems, and to fulfil their needs in a participative approach. As a local association, the *Sanghas* form a privileged place for information and knowledge sharing, and for the strengthening of social linkages among the members (Haubert 1997). The practice of holding regular group meetings is found to build better understandings, forge solidarity, and develop qualities of self-help and mutual help among the members.

Nevertheless, the *Sanghas* has not always proved to be successful in the pursuit of GMCL objectives. In the village of Kallupathy, the *Sanghas* failed to enable

members to realise their potential benefits. The reasons identified for the failure were the presence of misconceptions about *Sanghas* goals both among the team and the members and lack of clarity about the concept of the *Sangha*. The main lessons drawn from this case is the need for creating *Sanghas* based on a clear assessment of the needs of different groups of women, based on the criteria of age and socio-economic conditions, ensuring clear understanding of the concept of *Sanghas* among team members involved in promoting *Sanghas*, and enhancing the relevance of *Sanghas* to their members by enabling them to meet effectively their requirements, in terms of amount of time necessary to carry out the shared activities and personal responsibilities.

From the field observations of different *Sanghas* in the study area, it results that the factors affecting group dynamics and group functioning have been mainly the feeling of solidarity and pervasive benefits from group formation, increased awareness of group members, self reliance, and transparency. The feasibility of *Sanghas*'s development is uncertain where such resources, enthusiasm, and altruism do not exist.

While considering the internal factors contributing to group's success, groupwise variations were not observed; almost the majority of the members, irrespective of groups, remarked that good leadership, co-operation among members, and transparency in decision-making are essential for the smooth functioning and sustainability of the group. However, members felt that the role of the group leader is one among the foremost factors responsible for a group's success or failure. In some of the defunct groups, absence of a strong secretary to inculcate in the members the real spirit of group dynamics had led to its failure.

The case study shows that the presence of local leaders can be another decisive element for the promotion and the success of *Sanghas*. In many villages, the role of leaders has been essential in facilitating the mobilisation of women and the catalysing of collective action within local communities. On the other hand, distrust in the leaders, lack of transparency in transactions, and autocratic style of function in leadership were identified as the major factors inimical to the success of some groups in the long run. Also, instability in leadership in the initial years may lead to the failure of some groups. It has been found that when efficient and dynamic leaders leave a group, it collapses.

Overdependence on leaders is found among members of some Sanghas. This system of spoonfeeding cannot be considered a positive sign; a strategy of gradual and slow withdrawal of the helping hand of the leader seems to be the ideal mechanism for making the groups self-reliant.

Regarding the *external factors* that contributed to the success of GMCL, from the interviews carried out with the farmers, it has been emphasized that the role of the promoting agency, such as the CCD and the field co-ordinator, have played a particularly important role. Deliberate external intervention by committed and sincere staff is essential to give shape to, nurture, and empower the groups. The role of the promoting agency is not confined to mere mobilisation of rural women. The agency is also expected to inculcate in them a spirit of self-help and mutual help and a profound understanding of the mission and goals of the *Sanghas* groups cannot be built overnight. Group formation is a slow, time-consuming process. Once the members

get the crux of the mission and realise the benefits, they would remain loyal throughout and never leave the group. When the group becomes stabilised in its functioning, internal factors like good leadership, unity, and mutual understanding among the members determine the pace of growth and development.

The majority of the *Sangha* members interviewed felt that the CCD and the co-ordinators had a crucial role in the initial years till the groups reach the stage of self-sufficiency. Their help may be needed in various stages and at all times of community activity for finding solutions to the problems which the groups would face. It was found that the more educated the members were, the less is the intervention required by co-ordinators and organisers. Also, the more backward an area, the greater is the intervention required.

Group formation was rushed through, at least in some groups, with inadequate preparation of the participants and clarity about the goals. This is evident from the fact that, in inactive groups, members were found to have left the group after a short time. The enthusiasm shown in newly-formed groups was lost, at least by some members in about 2–3 years of functioning.

In reference to the results, in the GMCL approach, women's development through income generation is seen as a process whereby they can attain gradual control over resources and production processes. Recognizing the multi-dimensionality of poverty, the GMCL approach places emphasis on holistic strategies. There is a greater emphasis on structural inequality rather than individual behaviour as factors influencing incomes. The task is, therefore, seen not so much as one of addressing low incomes at the individual level, but the formation of groups and associations of poor women for mutual support in production and to pressure for change in wider inequalities.

In relation to the economic development process promoted by GMCL, we can observe that this community based enterprise has played an important economic role, such as supporting the development of skills aimed at enhancing women's productive capability, promoting women's control in the management and marketing of the enterprise, providing access to new financing opportunities for women, and helping women control and own cash and the means of production.

In the GMCL approach, the development of women is a combination of changes in their personal and public life at the socio-economic and cultural levels. It is important to emphasize that the results of this form of development intervention are not just limited to economic consideration but also entail some important social aspects. These aspects pertain the enhancement of women's training and education, the increase of awareness among women about gender inequalities, the strengthening of local women's organizations, and their networking capacities at different levels. The development of leadership skills amongst women, the increased access to decision-making processes have been other important outcomes.

The most striking observation was that a vast majority realised the need and significance of mutual help and co-operation. Their social outlook changed considerably after joining the *Sanghas*. Stepping outside the home and participating in some form of collective undertaking that can be successful, has helped in developing a sense of independence and competence among the women in both leadership and

membership tasks. In this respect, the creation of a small, cohesive group, such as the *Sangha*, in which its members may identify closely, is paramount. Being part of a *Sangha* has widened the women's sense of identity. Membership to the *Sangha* belongs to the women independently. The women join together on an equal footing. The emotion associated with participation in the *Sangha* is effectively expressed by a woman who states: *"being a member of the Sangha is like being in my maternal home."*

Organizational theory and empirical evidence support the notion that knowledge is socially constructed. A process of mobilization and collective action develops a shared cognitive system and shared memories. These forms of organizational cognition, which call for the understanding of events, open the opportunity for social interpretation, as well as the development of relatively dense interpersonal networks, for sharing and evaluating the information, thus creating effective learning systems. Organizational learning can be relatively low level or single loop, involving only minor adjustments and fine tuning of existing organisational images and maps. Conversely, it can be reflected in the alteration of existing norms, assumptions, and values that govern action. Such learning is referred to as high-level or double-loop learning (Cousins and Earl 1992, p. 401).

This collective learning, which draws upon the theory of social learning of Albert Bandura, has been argued to be one of the greatest benefits of participatory evaluations in education (Cousins and Earl 1992). In my view, the rationale of learning that occurs in women's groups is the same. In-depth interpretive analysis shows women's capabilities in *Sanghas* to creative *social learning processes*.

Social learning has been an effective strategy to bridge women entrepreneurs' technical and managerial capabilities, enhance their self-confidence and organizing potential to advance their interest, and effect social change. One such promising and potentially transformative change concerns their variable, yet important, contribution to education provision, youth entrepreneurial apprenticeship, and girls' education. *Sanghas* have been effective in improving the levels of knowledge and skills of the rural folk through informal education and programmes to enhance the capacity-building of women.

The GMCL case study also shows that empowerment processes in gender entrepreneurial activities is facilitated by a mode of conceiving the economic activity close to the women's everyday experiences, and if it builds upon the intellectual, emotional, and cultural resources the participants bring to their social space.

In the GMCL approach, there is a clear focus on knowing the experiences of the women in their everyday life; there is an equally strong focus on making those experiences collective through taking part to the same economic activities. This discussion of everyday life has a number of consequences. When women talk to other women about their personal experiences, they validate it and construct a new reality. When women describe their own experiences, they discover their role as agents in their own world and also start establishing connections between their realities. It should be clear that the discussion of personal lives, of needs, necessitates of a friendly, receptive social space.

The fact that these village organizations, such as *Sanghas,* are created on the basis of collectively owned cultural and social endowment facilitates the creation of

solidarity among community members and receptivity to collective action. Granovetter, aligned with the notion of *embeddedness,* underlines how the economic actions of individuals are always imbibed in social networks. The network, therefore, constitutes a specific way of coordinating the personal and interpersonal relationships that help the building of trust and prevent the generation of opportunistic behaviours. A woman from Minitankulam village affirms: *"It is good to be a member of the Sangha... This helped me to meet other women of the village. We share our problems and we support each other. If someone is in need, or if I am in need, I know that I can rely on them and they know that they can rely on me. This is mutual."* The establishment of these community networks, which are the result of these community organizations, has allowed resources to be pooled, actions to be coordinated, and safety nets to be created in order to reduce risks for community members (Bourdieu 1997; Putnam 1973).

One important element of a community enterprise, such as GMCL, lays in its capacity to combine the economic and social aspects of entrepreneurship activity, which represents a salient element characterizing women enterprises in developing countries. Social capital is a community's major resource (Bourdieu 1997). The process of empowerment, which is a result of their involvement in GMCL, can therefore foster other entrepreneurial initiatives inside the village community. As a women from Kulayur village affirms: *"I am a member of the local Sangha. This has helped me a great deal to increase the faith in my own capabilities and in the ones of my group. Our work has been fruitful. We have had good results in the Sangha and we continuously supply to GMCL several species o plants. The quality of our supply has always been considered good…I have decided to start up a little activity with other women of the village. We will produce baskets and sell them locally."*

In this process, the role of the CCD field coordinators, as group facilitators, has been important. The latter, it has already being pointed out, have been able to promote a participatory process which provides constant encouragement and support to the members.

The GMCL study case shows that the process of empowerment, attained locally by the women, has been achieved gradually. The positive results of women's economic activities take place only when the *Sanghas* become consolidated and socially sustainable in the long term. The extent of empowerment varies with the age of the group. Members in older groups show a high degree of social and psychological empowerment than their counterparts in infant groups.

Nevertheless, the multi-dimensionality of women's subordination raises questions about the degree to which the development of an economic activity is able to instigate processes of change to challenge the social discrimination that women face. In the case of enterprise development, response to women's immediate expressed need for an income may not significantly affect other aspects of gender subordination, and may even intensify them (Tsang 1996; Chow 2002).

Evidence from the interviews we carried out with households indicates that male family members are often very supportive of initiatives to increase women's incomes, where this increases resources coming directly into the household and under their wider control, and where this does not require any change in women's

unpaid domestic or productive work. They are also often supportive of women breaching the most extreme forms of seclusion to this end. They are, however, often hostile to any attempts by women to increase their control over income, unwilling to take on any increased burden of household work, and thus become extremely suspicious of any attempts by women to increase their independence.

The GMCL study case shows that participation should not be considered an indicator of success of gender enterprises in achieving women's empowerment. The reasons for women's high and increasing levels of participation in GMCL are diverse. Individual women may have competing and in some senses conflicting motivations for increasing their levels of participation in market activities and taking part to a community-based enterprise, such as GMCL. The majority of women interviewed have emphasized the need to increase their family revenue by becoming sales representatives, or by taking part to the collection of raw herbs. Decreasing opportunities for men to earn a "family wage" means that many households are now no longer able to meet their needs from male wages alone. In many cases, male expectations that women will contribute to the family income pool have increased. Evidence also suggests that the numbers of female-headed households where women are forced to take up a wage income have risen (Brush 2006).

These women are being pushed into whatever market economic activity they can take up. The seasonality of raw herbs harvesting activities allows these women to balance them with their other agricultural occupations.

A more limited number of women explain their motivation in taking part in GMCL activities, with a demand to have access to an independent income, as a means of resisting gender and ethnic subordination inside the village society. This minority of women were quite willing to challenge many of the gender norms in the interests of a higher income, in order to improve their social position.

Thus, changing the attitudinal barriers, which still persist among rural women, may take a long time. The case study reminds us that empowerment is a time consuming process. Considering the fact that *Sanghas* have been functioning only for a short time and the area is backward in all aspects, we feel that the 'take off stage' has been successful. A gradual shift in women's perception about the roles of their daughters is a clear indication of their changing attitude. However, the groups have a long way to go before becoming strong enough to change the power equations in the family and the society.

In relation to local development, GMCL represents an innovative move to bypass inequalities in the market system, which is focused on setting up alternative community organizations. The problems of poverty are seen in the GMCL approach as multi-dimensional and qualitative, rather than only economic and quantitative.

This case study emphasizes how empowerment cannot be constrained by a sectoral approach, nor can it be related to just a set of activities or inputs. Empowerment is an all-encompassing term, in which a whole range of economic and social activities, including group organisation, agriculture, and income generation initiatives, education, integrated health care, and so on, would work synergistically towards the common goal of empowering the poor (Dessy and Ewoudou 2006; Mayoux 2006;

Amin et al. 2003). In this respect, the GMCL initiative has been effective, thanks to *its holistic approach*, which considers the different needs of women.

It is clear, from the GMCL experience, that empowerment is not a final result of this development initiative, or a state that can be attained within defined timeframes. Instead, empowerment is a dynamic and on-going process, which can only be located on a continuum.

Kabeer (2001b) argues that individual women may challenge structural inequalities when they act in ways inconsistent with gender norms, but that the impact of such actions tends to be limited. The "project" of women's empowerment requires collective action in the public sphere. Notwithstanding the importance of collective action, we would argue that individual actions may bring about significant normative changes at the community level, which can be accurately described as empowerment, depending on the social processes involved. According to sociological theories of diffusion, new ideas and practices often spread gradually without collective consciousness that fundamental change is occurring (Rogers 1995). At some "tipping point," however, the prevalence of new processes becomes great enough for there to be a revolution in norms, as well as in the collective consciousness.

The capacity building initiatives carried out with the organizational and training support of NGOs, such as the CCD and FRLHT, have given an opportunity to women to acquire several skills (literacy, accountancy, commercial, marketing, leadership, etc...) and as a result, to begin to feel sufficiently self-confident to function as autonomous individuals. But if acquisition of these skills became the essential step in empowering, then at the individual level, the fact of carrying out an economic activity at collective basis provided the necessary motivation that united them at the collective level.

GMCL demonstrates that women may become successful entrepreneurs. Nevertheless, it cannot be assumed that increases in income will necessarily translate into increased control over that income, increased well-being, or changes in other aspects of gender inequality. Under certain conditions, such as the case of GMCL, both processes do occur, but this is not automatic and can by no means be assumed. Without measures to address gender inequality, such as capacity building initiatives, enterprise development may merely increase women's workload and responsibilities without increasing their control over income.

Increasing women's participation must take into account potential costs. It must also take into account potential limitations to building on existing women's strategies and/or treating them as a long-term solution. There is likely to be a very delicate balance between building on women's own knowledge and experience, and introducing (rather than imposing) new ideas and perspectives for change. Differences and potential conflicts of interest between women must also be taken into account. Arguably, a commitment to grass-roots participation only makes sense within a broader political commitment to equity. Although this has been recognized in general terms, in relation to class and caste, many development agencies are still unwilling to accept this in relation to gender. There are some ways in which these concerns could be integrated into enterprise programmes themselves.

As GMCL shows it effectively, the types of support needed are likely to be highly context-specific and dependent on the particular needs and priorities of the women concerned.

7.3 Women Entrepreneurship and Its Key Role in Promoting Primary Health Care

The world has witnessed an unprecedented growth of wealth and technological revolution, especially during the second half of the twentieth century. Concurrently, the overall health status in most nations has also improved (UN 2007; WHO 2007; World Bank 1998). In spite of these and other technological achievements, the majority of the world's population, especially the women, continue to suffer from persistent inequalities, which cause preventable harm to their health and quality of life. Women, who experience greater rates and depths of poverty, especially in low-income countries, are especially vulnerable to poor health (Bangser 2002).

The relationship between poverty and poor health conditions has been characterized as synergistic and bidirectional (Judge and Patterson 2001; Wagstaff 2001). Poverty limits the capacity to maintain good health, and thus leads to further impoverishment, diminishing the potential of individuals and households to improve their economic well-being (Krishnan 1999; Judge and Patterson 2001; Wagstaff 2001).

The recognition of the interconnectedness of poverty and health has led to the promotion of pro-poor health strategies, which focus on and provide benefits for poor women. Examples include targeting health resources to illnesses that disproportionately affect poor women, investing in health services used primarily by poor women, and providing mechanisms to protect poor households from health shocks (Bloom and Lucas 2000).

Alternatively, poverty alleviation strategies (PASs), such as microcredit and entrepreneurship programmes, have tried to tackle the health problem of women (Feurestein 1997). PASs can adopt various forms. Debra Lipson's (1998) review of potentially pro-health PASs included community and micro-enterprise economic development, agriculture and food policies, education policies, macroeconomic policies, and environment or infrastructure investments to improve the supply of safe water and basic sanitation.

Despite the recognition of the connection between health and poverty, microcredit and entrepreneurship programs have up to the present been mainly focused on the economic aspect, which remains the priority (Ronsmans and Graham 2006). These programs have also been criticized for their weak impact on the revenues of most poorer women and the limited access to the basic health services (Hofmann and Marius-Gnanou 2003, 2005). Doubts have been also raised on the success of these programs to improve the social status of women at household and community level (Fernando 2006; Mayoux 2006).

In recent years, the issues of women's health and poverty reduction have become increasingly salient in development interventions of governments and NGOs, as well as international organizations.

The importance of women's health, in terms of human development, has been recognized at different levels. Women's health most directly affects their own health. However, women's health is linked to women's lives not simply as a health issue. As an individual in her own right, a woman's status and empowerment as an individual and her ability to be healthy strongly impact each other. As a member of a family, the health and well-being of a mother shapes the health and education of her children, and the finances and welfare of her household. Finally, at a macro level, poor women's health strongly affects a nation's economic development, in terms of growth, productivity, equity, and health service delivery.

The link between economic opportunities for women and their health has been explored by several scholars, although this relationship has not been as extensively examined as the link to education (Fisher et al. 2001; Mushtaque et al. 2001). Key mechanisms include increased access to economic resources, better access to collective resources or public goods and services, and overall improvements in material conditions (Lynch et al. 2000). It has been shown that these mechanisms may improve health via the production channel through two main actions: maintaining and protecting health, and restoring health (Fisher et al. 2001). Their increased experiences and roles as economic actors may empower women through greater control over income, which, in turn, may increase their power in decision–making about health care and their ability to access and pay for the services. Research on women's employment indicates that increased income may act as an enabling factor for the use of health services (Chakraborty et al. 2003).

Increased income is associated with lower mortality and morbidity, and higher utilization of health services, even after controlling for other key factors (Anson 2004; Kuate 1997). Economic opportunity, in terms of participation in credit programmes, has also been considered beneficial; a study in Bangladesh found that women who participated in credit programmes were more likely to use health care, controlling for other factors (Nanda 1999).

On the other hand, lack of income is generally associated with a greater likelihood of women mortality or morbidity. Taguchi et al. examined 59 cases of death and 177 control cases in Indonesia, and found that, controlling for other factors, women who were unemployed had over four times the chance of death than employed women. Evidence indicates that lack of economic resources is also associated with a greater chance of maternal health complications such as illness following childbirth. Kuate Defo (1997) found that in Cameroon, women who did not work experienced a significantly higher likelihood of episodes of illness in the 2 years following childbirth.

Literature shows that, in addition to influencing health status, increase in income and participation in credit programmes were positively correlated with seeking some health services. Women in white-collar professions and agriculture in China and the Philippines were found more likely to use care services (Anson 2004; Miles-Doan and Brewster 1998). Chakraborty et al. (2003) show that Bangladeshi women who were gainfully employed had a significantly greater likelihood of seeking modern health services to treat complications than women who were not employed. This effect was not statistically significant after controlling for other variables, suggesting that, in at least some cases, employment may have an indirect effect through other factors, rather than directly itself influencing women's health.

The recognition of the interconnectedness of poverty and health has led to the promotion of complementary interventions in poverty alleviation having positive effects on health pro-poor health strategies for the women. In these last few years, a rapidly increasing number of women's income generation programmes and projects, such as microcredit and entrepreneurship programmes, has been created in many countries.

In the light of the above, we shall explore here the associations between health, active agency and women's entrepreneurship, by giving voice to GMCL members, in order to identify how far this initiative has improved their access to financial resources and basic health. A women from a Sangha in Dindugul emphasises how the participation in the GMCL initiative has allowed her to have a better access to medicines for the members of her family, especially the children *"I use these products to cure my children too. I use the products to cure the cough and fever. It is very important to use these products as they have no side effects, so it is safer for my children. As these medicines are cheaper then the allopathic medicines, I can cure my children better as I can give them more often, when they need them. Before I had to think before buying the allopathic medicines as they are more expensive."*

Indeed, the initiative of GMCL is not only limited to the sale of phytomedicines. Following the training that the members of the Sangha have received, these women are able to play a role of consultants for basic health needs vis-à-vis the other women of the community. A sales representative from the village of Ramanand affirms: *"Many women feel more comfortable talking about their health problems with me then with a doctor. Sometimes women have also gynecological problems such a white discharges and they ask my advice. I give them a medicine which is targeted for that. There are several women that told me they didn't dare asking for an advice to the doctor as they feel intimidated by him but with me it is different. There are also some women who have no money or time to travel to the clinic. The closest clinic is 15 km from our village. They cannot go alone but they have to be accompanied by their husband or a male member of the family. Therefore, because of these difficulties, these women postpone their cure and are not healed. But since I have stated selling the medicines, they can come to visit me and I can help them."*

Having outlined the positive aspects of this experience, it is important to remember, however, that finding effective solutions to the health delivery service in rural areas is a very complex issue in a developing country like India. Initiatives, such as the one of GMCL, although effective in improving local basic needs of the population, have also their limits in terms of scale and intervention capacity.

To improve the prevailing situation, the problem of rural health is to be addressed both at macro (national and state) and micro (district and regional) levels. This is to be done in an holistic way, with a genuine effort to bring the poorest of the population, including the women, to the centre of the health policies. A paradigm shift from the current 'biomedical model' to a 'sociocultural model,' which should bridge the gaps and improve quality of rural life, should be necessary. The failure of India's public health system to deliver basic health services and infrastructures to the poor requires serious rethinking of its institutional design and the structure of incentives that health service providers in the system face. Not only is there a challenge for the

authorities to raise the public health spending considerably, but there is the additional challenge to scale up the availability of trained manpower, such that the required number of medical personnel is available to work in the rural areas.

Further research to document and analyse other organizational forms and outcomes of such innovation at the institutional level could be important, in order to expand the understanding of the factors connected with the formation, evolution, and performance of these alternative form of community initiatives. Understanding the ways in which market, governmental, and non-governmental organizations may interact and favour these grass-root initiatives is also important.

7.4 Women Entrepreneurship as an Effort to Link Conservation and Development

As we have been illustrated in earlier chapters, in more recent debates on environmental and development issues, women have gradually become visible. The emerging importance of participatory approaches, in the context of applied development and conservation initiatives, has led to a growing interest in "indigenous" or "local knowledge" in resource management. However, in development work and nature conservation at the practical level, gender issues are still quite often considered as "special issues" or "further aspects." At the beginning of this book, we highlighted the Convention on Biological Diversity (which was signed at the Rio Earth Summit in June 1992), as an important impulse that stimulated interest in the linkages between gender and biodiversity conservation, as it explicitly recognizes in its preamble "the vital role that women play in the conservation and sustainable use of biological diversity" and affirms "the need for the full participation of women at all levels of policy-making and implementation for biological diversity conservation."

Nowadays, the integration of conservation with economic development for local communities, such as microcredit or community enterprises, is increasingly seen as a way to alleviate poverty, and promote community participation in conservation efforts (Virdi 2004; Tenenbaum 1996). Indigenous entrepreneurship has become an option to couple community development with environmental protection, while strengthening, at the grassroots level, women in sustainable natural resource management (Zhao and Aram 1995). The major question is whether a market-oriented intervention, such as a community enterprise like GMCL, can promote activities related to sustainable natural resource use? Below, we explore the impact of GMCL in the field of conservation, and management of genetic resources by adopting an actor-oriented approach, which conceptualizes women as social actors, who attempt to solve problems, use their own strategies within an arena of limited environmental conservation opportunities, and participate in the societal process as decision makers and negotiators in resource management. We have found evidence that supports both a positive and negative appraisal of community enterprises and biodiversity conservation.

The training programmes organized by the FRLHT and CCD (cf. Chaps. 5 and 6) helped the women in recognizing and giving value to their local knowledge of medicinal plants. This has resulted in an increased capacity to study and document medicinal plants and their use, make an inventory of medicinal plants and local biodiversity through biodiversity registers etc... Thus, an increased awareness of the importance of the medicinal plant resources and therefore its conservation has been observed among the GMCL member. Most women said that the understanding and consciousness of this natural resource have improved because of the community development programmes.

On the occasion of programs, such as local healers' conventions and village botanists' workshops, local communities in village learned new skills of identification, herbarium preparation and new uses of medicinal plants. This has helped them in recognition of the importance of medicinal plant conservation and protection. Thus, GMCL contributed to a shift from a form of individual knowledge and awareness of resources conservation, mainly possessed by the folk healers, towards a form of collective knowledge and awareness of medicinal plant maintenance, more diffused at the wider community level.

As we have described in Chap. 5, in the purpose of educating villagers and increasing their knowledge of medicinal plants and traditional health practices, a Medicinal Plants Conservation Park (MPCP) has been developed by the CCD in Madurai district in a campus named Sevayoor. The park consists of an Ethno-Medicine Forest (EMF) spread over 33 acres with a collection of over 500 plants species. This park has been conceived as an open space where humans, in this case local villagers, other communities, students, etc., can come to see all the medicinal plants available in the zone and to learn about their different therapeutical uses. Similar regional resource centres are also being set up at Natham and Nagapattinam, which function as Community Conservation Centres (CCC) as well, owned and managed by the local communities, facilitated by the CCD. These environmental grass-roots initiatives serve as supportive means in the process of sound medicinal plant conservation.

Although GMCL, in partnership with outside organisations, succeeded in promoting solidarity among grass-roots women in order to enhance their knowledge, and use of and access to over natural resources, their participation in the decision-making process as well as the equitable distribution of resources and benefits accruing from these resources, one has not to forget that GMCL could only develop thanks to the a availability of medicinal plant resources in the local area. Without this local availability, the constitution of this community-based enterprise would have been unlikely. An important issue, therefore, to be monitored in the future concerns the sustainability of this resource. A diminution of this key resource can put this community-based initiative centred on ethnomedicine at risk. Thus, a particular emphasis must be given by GMCL to sustainable harvesting techniques in order to assure the long-term occurrence of local biodiversity resources, which lays at the heart of community-based enterprises active in the sector of traditional medicine (Laird and Pierce 2002). One option might be the cultivation of medicinal plants that are becoming, or might become, rare due to

overharvesting in order to maintain their availability in the long run. However, this possible solution requires specific propagation techniques which are not always and easily available on the ground. There is also the problem of land tenure and availability, as most of the local farmers possess a limited surface of land. Moreover, such conservation techniques must be harmonised with the sociocultural context, in order to avoid imposing a Western conservation approach, which is far from local realities.

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Retraction Note

Bridges Between Tradition and Innovation in Ethnomedicine

Chapter 2 The Entrepreneurship and the Role of Indigenous Communities

M.C. Torri and T.M. Herrmann, *Bridges Between Tradition and Innovation in Ethnomedicine: Fostering Local Development Through Community-Based Enterprises in India*,
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This chapter has been retracted at the request of the Author, Maria Costanza Torri; parts of the text in this chapter were used without acknowledgement or approval of the original publications and their authors, namely "Toward a Theory of Community-based Enterprise" published by Drs. Ana Maria Peredo and James J. Chrisman in Academy of Management Review 2006, Vol. 31, No. 2, 309–328, and "Towards a theory of indigenous entrepreneurship" published by Dr Ana Maria Peredo et al. in the International Journal of Entrepreneurship and Small Business, 1(1/2), 1–20.

Additionally, a contributor to the retracted chapter had not been named.

The author confirms that the co-editor of this book, Thora Hermann, was not involved in the authoring of this article and was unaware of the source of above mentioned portions of text, and apologizes to remaining contributors of this volume and to readers as well as the authors of the original articles.

Conclusion

At this point, we can draw several interesting conclusions. The first is that GMCL and its network have responded to the emerging reality of the protection and use of traditional knowledge, and the need to embed economic activity and development intervention in a much wider sense then has been habitual up to now. The view of traditional medicine focuses solely on positive effects and neglects important subtleties and notions, such as the fact that medicinal plants can also be poisonous if not used properly (Laplante 2003). Nevertheless, it does serve to promote a new commercial form of TM that can compete with allopathic medicines to a certain extent, which are currently seen as a panacea, the 'commodification' of the health model (Nichter 1989). Aside from this possible frail therapeutic claim, which suggests that TM has no side effects, this community enterprise currently provides livelihood opportunities to numerous families, mostly landless labourers.

Despite some shortcomings, the revitalization of local traditions has played an important role in setting up GMCL, and in fostering the sense of involvement and interest among the villagers to become a part of the company. This may favour the participation of many villagers although local traders and new elites have the monopoly of much of the medicinal products trade, possibly also through GMCL. This phenomenon is associated with the caste system, as well as the capitalist system, which obviously leads to individual gain. The issue of "elite capture" regarding conservation and development projects is well-documented (Agrawal 1999). It is not the primary objective of this paper to examine the possible monopolization of the herbal market by outsiders, such as local traders, and this issue would deserve further investigation.

– At the beginning of this book we have raised several key questions, one of them being: ***What are the prerequisites for the constitution of a CBE?***

Tan (1996) affirms that the type of economic activity adopted by CBEs is related to the type of skills and experience acquired by local communities before the creation of the CBE. Previously developed skills and experience influence the nature of the entrepreneurial activity. Skills and resources acquired before venturing are

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important factors that both improve the chances of venture success (Bygraveand and Minniti 2000; Suneetha and Chandrakanth 2006) and provide a context for the search for opportunity (Ardichvila et al. 2003).

In the case of GMCL, the basis for the creation of this community-based enterprise has been the traditional knowledge related to medicinal plants and their use. In some communities, the traditional *savoir-faire* in ethnomedicine is dwindling, as well as the faith of the villagers in its usefulness and efficacy. Therefore, the revitalization of local traditions in ethnomedicine, with the active engagement of folkhealers and knowledgeable elders, made possible through the intervention of the FRLHT and CCD, might give an important contribution to foster the sense of involvement and interest among the villagers to take part in participative forms of entrepreneurship focused on ethnomedicine.

The inspiration for this now widespread initiative arose not only from the desire to protect community intellectual property rights; it was also felt that through a documentation process, communities could also renew or develop resource management strategies promoted by the FRLHT but led by the villagers. It is important here to mention that both the Federal Drug Association (FDA) and the World Health Organization (WHO) have recently accredited value to medicinal plants for their historical use. Ironically, it can only provide them with value if these are documented. This explains how such initiatives, like the FRLHT initiative, can actually enhance 'traditional' knowledge, at least in this new form. Here again, one can argue that simply codifying knowledge is not a very effective strategy to keep this knowledge system alive and that other measures are necessary at the local level, such as preserving local ecosystems and recognizing the value of this knowledge in itself without trying to impose Western development models, although the latter are inevitably also modified as they are offshored (see for example in Petryna 2007).

In the CBE, the community's **cultural identity** can **be a driving force**, impelling social, economic, and environmental initiatives concurrently. At the same time, it is the local culture that may endow the CBE with flexibility and the comparative advantage necessary to compete in the market (Ardichvila et al. 2003). Cultural tradition can become the launching pad for a new enterprise; but conversely, the presence of enterprise can strengthen or create local social and cultural systems. The active involvement of local members plays an important role in generating a sense of community (Bowen et al. 2000) and shared ownership on the part of participants in the development of CBEs.

As our book has shown, GMCL can be seen as one example of how local culture, indigenous identity, and traditional knowledge can be a fruitful basis to strengthen community participation and to increment local skills.

The GMCL case study also shows the **importance of local resources** as a prerequisite for the constitution of a CBE. The key resource, which constitutes the pillar of GMCL, is represented by medicinal herbs. The basic condition for the development of GMCL has been the availability of this resource in the local area. Without this local availability, the constitution and the development of this community-based enterprise would have been unlikely. An important issue to be raised at this point concerns the sustainability of this resource in the future. This is relevant,

as the lack of availability of a key resource can compromise the existence of a community-based initiative centred around ethnomedicine. As a consequence, a particular emphasis should be given to sustainable harvesting techniques in order to assure the sustainability of local biodiversity resources, which lays at the heart of community-based enterprises active in the sector of traditional medicine.

One of the initial hypotheses has been that a CBE is the product of an **incremental learning process.** According to Helmsing (2002), a CBE is the result of a process grounded in collective experience, and a sharing of knowledge in ethnomedicine.

The study case of GMCL can offer here two key factors necessary to favour a leaning process which comprises its two main pillars, e.g. learning of social skills and learning of technical skills. Only through the combination of these two elements is a community based enterprise is likely to achieve to thrive and make a real positive impact on the communities involved.

One of the important aspects highlighted in this book is the importance of seeing local and scientific knowledge as a coproduction. Local knowledge associated with the use and conservation of medicinal plants is either codified in ancient scriptures or in folk-based scriptures, and is transmitted from one generation to the next in the form of community-based health traditions. The integration of ethnomedical knowledge and scientific know-how has allowed communities in Karnataka and Tamil Nadu to successfully enhance their ethnomedicinal capacity and promote their own form of development, at least to a larger extent than more 'traditional' forms of top-down development. However, new forms of TM are found to result from the process, such as local 'elite capture.' Clearly, the idea of ethnomedicine and the reality is a definite essential asset of the innovation process; the limits of this participation are the 'externally driven' standardization and codification processes required for the plants to be recognized, which have the effect of disbanding the knowledge from the protocols and epistemologies, in which they were previously embedded.

As GMCL has shown, the learning of *social skills* at the community level is a complex process that can precede the constitution of a community-based enterprise, which could, moreover, be placed within an already consolidated village organizational structure, thus maximizing its impact and community outreach. In order to facilitate the acquisition of social skills, even more important here is the consolidation of small size village organizations which are homogeneous in terms of caste and socio-economic background.

Community-based enterprises may not always reflect the complexity of the network of relationships linking the members of the communities in the village. Social structures, such as caste and class, can influence the power dynamics within local communities. Social hierarchies in the form of religion and caste are among the strong factors, which most of the recent studies have found to be critical in household participation in local institutions (Deshingkar et al. 2005). Indian society is characterized by highly unequal distribution of wealth, and is divided largely on the basis of age-old caste systems (Borooah 2005).

These organizations hold indeed a privileged place for information and knowledge sharing and for the strengthening of social linkages among the members. In this respect GMCL could offer a best practice to mainstream social capital.

The GMCL case study provides further evidence that social capital has the potential to underpin the development of new frameworks in order to understand health and behaviour in individuals, within a broad and complex social context.

A key problem in measuring social capital for areas (of any size) is that the concept refers to community norms, which cannot be directly observed. Many studies have measured the extent to which individuals are engaged in voluntary and associational activities of various kinds, and/or the extent to which citizens exhibit 'trust' or and/or participate in the political system (Lochner et al. 1999; Veenstra and Lomas 1999; Veenstra 2002). There have been some interesting attempts at 'systematic social observation' of behavioural norms, through covert observational techniques' (e.g. Sampson et al. 1997; Sampson and Raudenbush 1999), but these could not easily be generalised beyond small areas without vast resources.

In the study of social capital of networks, it is necessary to further understand and assess the psychosocial processes and outcomes of planned initiatives, such as the ones analysed in the GMCL case study. This can include an analysis of the different degrees of a friendship network and social support inside the community-based health organisations.

There is a need for more data to analyse the interlinkages between social capital and health in grass-roots organisations, which include using a network approach, such as GMCL. This will help shed light on the relationships between attributes, for example, between norms and network characteristics, and between levels of external resources and network characteristics. In other words, norms specifically related to the treatment of others, the non-material external resource of members' willingness to help others in the group, and the consequence of support received by members of the group from others in that group could be seen as potentially and theoretically linked.

Another key lesson learnt from the pilot initiative of GMCL which has shown great potential for replication elsewhere in the world, is the importance of favouring also the learning of *technical* skills through *ad hoc* training programs. These latter programs involve, among others, processing and marketing of herbal drugs, value addition activities and sustainable harvesting and collecting techniques for medicinal plants. The enhancement of the villagers' know-how in this respect can represent a prerequisite to allow efficient implementation of commercial activities of medicinal products through village entrepreprises. At the same time, this aspect can favour sustaining conservation of medicinal plants, a resource which is becoming more and more rare.

– In reference to the **structure**, the question that we have asked at the beginning of the book was: ***Which are the main peculiarities regarding the structure and the functioning mechanisms of a CBE?***

The importance of the network, as an instrument to enhance the performance of the organizations, has been already emphasized in literature (Carley[1] 2003).

[1] Carley, K.M. (2002). Smart agents and organizations of the future. In: L. Lievrouw and S. Livingstone (Eds) *The handbook of new media* (Ch. 12, pp. 206–220). Thousand Oaks, CA: Sage.

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 throughout.

The GMCL model can provide a valuable lesson, as it shows the importance of adopting a multilayered **network structure,** 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, somewhat creating new 'global assemblages,' to borrow a concept introduced by Suthersanen (1999). These have occurred in a variety of ways and across different types of stakeholders 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 enhance the performance of a community-based enterprise.

Having said this, a noteworthy area that deserves more attention to enhance ethnomedicine is the establishment of a even wider and sounder partnerships with outsider organizations. Networking with governmental and other non-governmental organisations, and sensitization of mainstream institutions, such as universities and policy makers, is another important line of action, which should be strengthened in the future. This promotional strategy may provide the basis for a national health system that incorporates support to local health traditions, with the ultimate aim to ensure effective and affordable care for all those who need it.

Another strength and peculiarity of the GMCL model, which could be adopted in other community-base enterprises, is its capacity to create synergies, not just with outsider organizations but also to be embedded 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 (Peredo 2001).

The multidimensional interaction and cooperation between endogenous and exogenous organizations can be valuable in reinforcing their linkages with mainstream institutions, enhancing their opportunities and innovation, and in funding better and more effective ways of supporting local resources and skills.

The Importance of Active Agency of Local Communities

As the example of GMCL shows, it is essential to create a governance structure that can increase the active agency of local communities, in order to assure that the member interests are duly taken into account. This aspect can enhance the participation at the grass-roots level and democratise the processes inside the organisation. In this respect, the interaction between the upper and the lower strata

of the organization is a key issue, as has been demonstrated in the previous chapters (GMCL/Sanghas). However, barriers linked to challenging social context, such as social and caste stratification, must not be underestimated as low caste and social status may inhibit entry into entrepreneurial occupations. The intersections between gender and caste should be considered attentively. A commitment to the promotion of the active agency of women will only make sense within a commitment to enhance the equality of women in a broader term inside rural society. In order to attain a higher participation at grassroots level, efforts should be made to increment the linkages between the different local institutions, especially at village level, in order to enhance the opportunities to share resources, knowledge and information.

The issue of the degree of community participation in CBE's needs to be addressed at this point. According to MacLeod (1986) , the community acts as an entrepreneur when its members, acting as *owners, managers,* and *employees*, *collaboratively create or identify a market opportunity, and organize themselves in order to respond to it.* The response combines familiar or new elements, such as goods or services, methods of production, markets, sources of supply, and/or organizational structures.

In the case of GMCL, it can be argued that the participation of local communities is not really substantive, as it does not directly involve the management of the enterprise. Nevertheless, it needs to be stressed that the governance structure in GMCL is designed to be participative, not merely representative.

– At the beginning of our book we inquired about ***up to which point the use of biological resources can effectively portray the complex nature of the associated traditional knowledge system by taking into consideration not just the commercial but also its cultural, social and spiritual components?***

We have seen throughout our analysis that GMCL might provide some responses through a shift within ideas of benefit-sharing and a change regarding the access and use of traditional knowledge, by actively involving community agency within these processes. Thus, we argue that the analysis of this case study might be an important contribution to the debate, by giving interesting insights in the conception of more participative and equitable forms of bioprospecting.

The GMCL model shows that community bioprospecting could represent a promising model for development of local communities in the commercialization of biological resources. This type of bioprospecting could represent a culturally appropriate response to the problems of limited equity and participation, which characterizes the majority of benefit sharing agreements.

The enhancement of community capacity building, through community-based enterprises in the herbal sector, such as GMCL, could be an effective response to the *"structural and functional disconnection between informal, indigenous institutions and formal institutions mostly transplanted from outside"* (Dia 1996). Such disconnection has often undermined development activity in the past and is also a way to increase the capacity of a community to negotiate and to establish a more equitable relationship with the outsiders (especially pharmaceutical sector).

Having emphasized this positive aspect, one can, however, question the possibility of local elites to monopolize 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 in the literature (Manning et al. 1989). Even though it was not the primary objective of this book to examine the possible monopolization of the herbal market by outsiders, such as local traders, this issue would, however, deserve further investigation.

Another issue that emerges is up to which point it would be possible to mainstream the traditional medicinal practises into the Western health model, especially with regards to their efficacy. Attempts to measure the efficacy of traditional medicine by using Randomized Controlled Trials (RCT) and other forms of scientific assessment, which are highly ranked in the hierarchy of evidence, are philosophically and theoretically problematic (Borgerson 2005; Barry 2005; Villanueva-Russell 2004; Goldenberg 2006). Philosophically, the reductionist characteristic of positivist epistemology, which underpins biomedicine's view of efficacy and focuses on the removal of symptoms and diseases, is too narrow to evaluate traditional medicine systems that deal not only with diseases but also with holistically affective, social, and spiritual well-being aspects. Theoretically, the difference in knowledge about human anatomy and physiology, disease etiology, classification, and diagnosis between biomedicine and other medical systems entails different sets of definitions and measurements of effectiveness, as well as criteria for evaluating the success.

Many studies observed a distinction between epistemologies that underpin biomedicine and Asian medical systems. Unschuld (1987) insists that epistemological differences between traditional medicine in India and Western medicine actually lie in the differences in attitudes towards truth, or what he calls "patterned knowledge" in Indian knowledge tradition versus homogeneity in Western monoparadigmatic science. Shankar (1995) traces ancient inscriptions of indigenous knowledge to its origin. He also points out the distinction between modern and traditional approaches in knowledge verification. While modern experiments need to isolate a study object from its environmental context and limit confounding factors in order to measure the effects of varied controllable parameters, the traditional approach attempts to examine a study object in its entirety, together with its interlinkages and complexities.

– Finally, in reference to the results, the question that we have asked at the beginning of the book was: ***What is its impact in terms of local development?***

We have hypothesized that CBEs have an array of aims. Entrepreneurial ventures are, of course, undertaken with the expectation of gain (Bull and Winter 1991). But the **multiplicity of CBE goals** reflects the **diversity of local needs**, which both creates the potential for constructive local development and must be satisfied for exchanges and combinations of resources to occur (Nahapiet and Ghoshal 1998). CBE emerges as a prospective strategy for the sustainable alleviation of poverty partly because it is holistic and **integrates so many different aspects** of the community, including economic, cultural, and social outcomes.

Reduced dependence vis-à-vis health services from outside, improvement in women's access to health and market resources at household and community level, and increased active agency can be identified as the main positive outcomes of this entrepreneurial initiative.

In terms of primary health care, GMCL and similar grass-roots initiatives, although effective in improving basic needs of the local communities, also present clear limits in terms of scale and intervention capacity. It is important to keep in mind that health delivery service in rural areas is a complex and delicate issue in India. The difficulties of public health system in India to deliver basic health services and infrastructure in poor rural areas require major changes in terms of institutional design. Health needs in rural areas need to be addressed at both the national and district level, by bringing underprivileged groups, including scheduled tribes and women, to the centre of health policies. For this to happen, it is necessary to actuate a paradigm shift from the prevailing 'biomedical model' towards a 'socio-cultural model,' which is more concerned with linking local health with the improvement of the socio-economic conditions of local communities.

GMCL demonstrated how a community based enterprise could become an effective instrument of local development. As GMCL shows, the impact of such enterprises on local development must not only be of economic nature (increase of income) but should reflect the holistic nature of human development by including social outcomes, such as improvement of health conditions, empowerment and capacity building of local communities, and ecologic considerations.

The enhancement of capacity-building and empowerment at the community level in terms of traditional medicine and herb uses through GMCL is important for several reasons:

- There seems to be an emerging consensus that *capacity-building* and *empowerment* contributes to **socio-economic development** of communities in the long term (Alley and Negretto 1999; UNDP 1996). The increase of capacity building through enterprises operating at local level can therefore foster this positive process.
- *Capacity-building* and *empowerment* promoted by local enterprises suggests a shift towards the enhancement and the strengthening of existing capacities of communities **in participating through their village institutions**. The link between *participation*, *capacity-building* and *empowerment* has been underlined in the literature (Duncan and Thomas 2000; Aspin and Chapman 2000). The enhancement of community capacity building through grass-roots commercial activities could be an effective response to the *"structural and functional disconnection between informal, indigenous institutions and formal institutions mostly transplanted from outside"* (Dia 1996). Such disconnection has often undermined development activity in the past and is also a way to increase the capacity of a community to negotiate and to establish a more equitable relationship with the outsiders (especially pharmaceutical sector).
- As *capacity-building* and *empowerment* in GMCL initiative are rooted in the recognition of community capacities and institutions, they can lead to an increased emphasis on **partnership** with other stakeholders. This aspect is particularly

important in order to increase the effectiveness and the sustainability of this community-based enterprise.

As the approach followed by a CBE is holistic, the **sustainability** of a community-based enterprise depends upon a spectrum of economic and non-economic goals (Bowen et al. 2000).

From an ecological point of view, an important aspect to emphasize here is the issue of ecologic sustainability of plants used in ethnomedicine. Medicinal plants are becoming increasingly economically important, due to growing demand for herbal products in the domestic and global market. However, over 90% of the medicinal plants used by the pharmaceutical industry are harvested from the wild in an unsustainable manner. This destructive collection poses a definite threat to the genetic stocks of the species and to the overall diversity of the medicinal plants.

The effect of ethnomedicine promotion on the environment can vary between two extremes and they can be positive or negative in ecologic terms (Dilshad et al. 2008).

In terms of positive outcomes, ethnomedicine projects that stimulate conservation measures and the establishment of herb gardens, such as the ones created in the area under study, can help maintain biodiversity. On the other hand, the local and large-scale promotion and commercial production could bring with it a danger that heavily used plant species may become scarce or even extinct. Therefore, projects promoting plant medicines on a large scale should be required to monitor their environmental impact and explore how far endangered species can be cultivated.

The case studies highlight that despite some limitations and challenges that remain regarding the conservation of biodiversity and the different perceptions of traditional medicines from one generation to another, communities and local actors effectively build on their social and cultural practices to create innovative processes centred on traditional knowledge.

In essence, the GMCL example provides a unique model of how a CBE could represent an alternative and promising model for development of local communities. It is an unconventional form of entrepreneurship, in that it is based on regarding collective and individual interests as fundamentally complementary, and seeing communal values and the notion of the common good as essential elements in venture creation. These various characteristics make it a culturally appropriate response to the problems it is meant to address.

In our book, we attempted to explain the notion of CBE when applied to an alternative model of bioprospecting, identify the typical components of its formation, composition and operation and impact through the study case of a community-based enterprise, GMCL, active in the herbal sector.

The case study analyzed highlights the need to link local communities to other social and economic agents, whose capabilities are necessary for many substantive innovation processes to take place, in order to allow for an effective form of community development to take place.

As previously emphasized, the case study also draws attention towards a need for enhancing larger global networks with conservation policies and networks of healers, for example, who should be consulted as experts and whose work should be facilitated.

These community initiatives are sustained through innovative policies and actions that entice change and innovation; the latter may have positive effects, such as to revitalize or reinvent perceived traditions and essential links between plants and ethnicity, feed into new scientific knowledge, and create economic opportunities. Due to unequal power relations, innovation may also have negative effects, such as the transformation of these traditions into knowledge that is unrecognizable and difficult to integrate in local practices. Innovation may also lead to the transformation of these healing traditions into health commodities controlled by new elites.

In addition to the threat to medicinal plants, the gradual erosion of traditional health practices is leading to loss of conservation concern on the part of local communities. Both the folk medical culture and the codified classical health systems of medicine are eroding due to economic, cultural, and political pressure.

Knowledge differences between generations are alarming. In general, the elders within the communities are more knowledgeable about the use and management of natural resources than the young, as they still practise these traditions at the personal level. Similarly, the elder generations tend to relate to natural resources in more respectful way than the younger ones. Under the influence of modern culture, the younger generations have changed their attitude and also their appreciation of their own culture.

Presently, employment opportunities for a person as a healer are decreasing. Most of the healers have their primary occupation in agriculture, livestock rearing or as labourers. A healer in a village is given high regard and status, however, as he or she provides an important service to the community. This has evolved on basis of the traditional value systems: people who are cured by a healer pay respect in kind and deed. The monetary reward is less perceived.

There is obviously considerable scope for further work and research to test the conjectures offered above, as to the typical origins, evolution, and effects of CBEs, and to expand the understanding of these and other factors when connected with the formation, evolution, and performance of this form of enterprise.

With regard to the **conditions that give rise to CBEs**, and the different environments in which CBE may emerge (e.g., rural, urban, indigenous reserves, and new settlements), need to be distinguished, and the relevance of their differences considered.

Likewise, research should be conducted that leads to a fuller understanding of the characteristics of the CBEs that emerge.

For example, can **alternative forms of governance** be equally effective or is a fully democratic type of governance necessary to maintain the commitment of members of the community, as our discussion suggests? With regard to the **community's resources and skills**, how can these be expanded over time to provide greater opportunities for members? There is also the question of how CBEs set **goals**, what goals should be set, and how the goal formulation process can be improved.

With regard to the **outcomes** of CBE, there is almost unlimited scope for investigation.

The most obvious question is how well CBEs have actually functioned in the attempt to bring sustainable benefits of various kinds to the communities in which they arise. Such studies will clearly rest on identifying the criteria to be employed

in the evaluation of CBE performance, given the cluster of economic and social goals typically in play. Both qualitative and quantitative studies are needed in this area. The question of how, in detail, **market, NGOs and other corporate bodies** may interact with CBEs so as to benefit their operation as well as that of their partners also links theoretical with empirical questions. A vital area of inquiry in this connection is the relationship between CBEs and the surrounding economic and legal environment. Which **market structure and legal frameworks** foster or inhibit the emergence of CBEs, and which ones encourage or hamper effective and sustained performance?

Research that helps us understand how CBEs may work collaboratively with one another is also needed. The connection between rural poverty and the potential for generating livelihood security, through collection and growth of medicinal plants, has still to be understood and documented through studies, in order to be able to formulate strategies for the conservation and sustainable use of medicinal plants. As the GMCL case study shows, there is potential for organization of collectors at the local level. Promising models for local organization of medicinal plant collectors, such as GMCL, might also provide examples of mutually enforced codes of collection and associated marketing benefits.

Development of local institutions, with external facilitation assistance provided to primary collectors, will support the development of such kind of community-based enterprises. This may enhance the bargaining power of primary collectors and shorten the supply chain. Small-scale value addition options, which can be carried out at primary collector's level and community level, will yield better results and ensure sustainable management and development of resources.

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