

GLOBAL SOLUTIONS AND LOCAL FEASIBILITY

A framework of Analysis for Understanding Feasibility of New Initiatives in
Forest Management.

N. Hari Krishna* & Dr. Anandi Mehra**

Indian forest is fast depleting. The gigantic set up of forest department could hold on exclusive rights and powers over forest but could not prevent its continuous destruction. The department's powers came in between forest dwellers and their only livelihood source, thus inviting their contempt. The realization that the common natural resources like forests can not be protected under exclusive government control had prompted the policy makers to a revolutionary change in the approach of forest management. Joint Forest Management (JFM) as it is called has proved to be the most agreeable understanding between the forest department and local people in India today.

The strength of JFM lies in enabling local communities to have control over resources and making them partners in the decision making process. However, participatory nature of JFM alone can not ensure its success and the successful example can not be easily replicated in other areas. The process of JFM binds two different cultural entities together and also calls for different groups in the villages around a forest area to come to a common understanding. More importantly it requires willingness of the community to regulate their forest use behavior.

Willingness of the community can not be inspired in the absence of socially and ecologically conducive environment. The conducive environment or lack of it will have its roots in the past, present and social, cultural and economic domains. In the absence of the understanding of social, ecological and economic conditions in a village and willingness and capacity of community to organise itself for forest management in association with FD, the efforts of JFM initiation & expansion may not yield the expected results.

Apart from the willingness, capacity of the community, conducive environment the fourth and foremost condition for JFM initiation is the need of the community to have such arrangement. How to gauge the fulfillment of these conditions in the scenario of globalisation whose impact is making inroads even into the areas of forest dwellers.

JFM arrangement that has resulted into a harmonious relationship between the forest dwellers and the forest department for over a decade is now facing a new challenge vowing to changing policy environment, which will have direct impact on rural livelihood patterns in the context of globalisation and liberalisation.

An extensive study was conducted from July to November, 1999 in four villages (only two villages are discussed here for want of space) of Northern Gujarat state in India to assess the feasibility of JFM expansion in the context of several changes influenced by the process of globalisation,. The study used an innovative framework of to understand the feasibility conditions for JFM expansion in the changing scenario.

Feasibility Study for the Expansion of Joint Forest Management

1. Why Feasibility Study?

The concept of Joint Forest Management (JFM) marked a major breakthrough in the forest management in India. The concept was promoted with the understanding that, involvement of local communities in the development and management of the forest resources is essential for their long-term sustenance. JFM today is proven to be the most agreeable understanding between Forest Department (FD), Village Communities and Non Government Organisations (NGO's).

However, participatory nature of JFM alone can't assure its success and neither sustainability nor the successful examples can be easily replicated in other areas. JFM binds two different cultural entities i.e. FD and village communities to work together. It also calls for different groups in a village and different villages adjoining a forest area to come to a common understanding over the management of resources. More importantly, it requires the willingness of the communities to assume the responsibility of regulating their forest use behavior and develop a system of managing the allotted forestland.

Willingness of the community can not be inspired in the absence of socially and ecologically conducive environment. Conducive environment or lack of it will have its roots in the past and present social, cultural and economic conditions. Further, the organisation of communities and forest department to work together under JFM requires a firm belief in the concept supported by enduring efforts and resources. After all the efforts, as seen in many cases, the result could be frustrating owing to various social and economic dynamics at the village level.

2. How to Understand the Feasibility for JFM Initiation?

JFM is a process rather than an end in itself. There are no commandments to sustain this process. The program initiatives and approaches should vary according to the situations, which may be different in different regions and villages. A number of studies have documented the cases of failed JFM initiatives and offered a variety of reasons. Some of the reasons that emerged out of these analysis are political interventions, lack of group coherence, invasion of urban culture, availability of alternate livelihood options (for *example* see Mukerjee, 1997), etc.

2.1 Framework of Feasibility Analysis

In trying to understand why people cooperate, Singh (1996) proposed that people come together for a common cause and also fight with others for the furtherance of the cause as a group, when they feel it is necessary for their survival or prosperity.

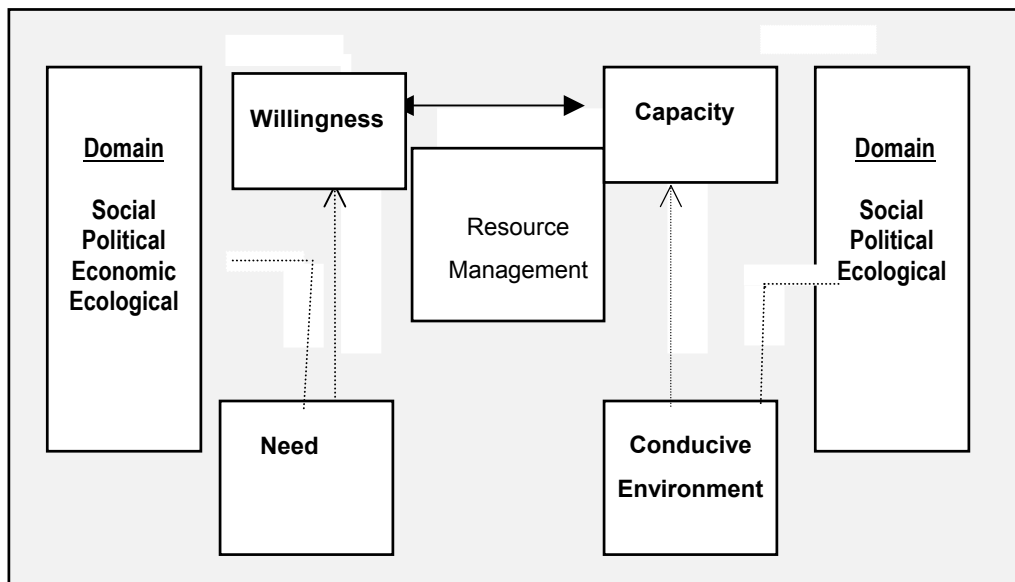
Implicit but not adequately highlighted condition for collective action in the literature is 'need'. This factor seems too familiar to make deeper inquiry. But it is

crucial for feasibility analysis for the initiation of efforts like JFM. The historical reasons behind the emergence and survival of *Vanpanchayats* (Forest Committees) highlight the need for such an arrangement in the hill environment, where forests provide livelihood for the people.

The primary condition of need apart, willingness of the community, their institutional capacity and conducive environment are the other essential conditions for the feasibility of the JFM initiative. The presence or absence of conducive environment can be assessed with the help of criteria and indicators, which can be gauged in the social, cultural, political and ecological domains (Figure 1).

Lele observed that, “sociological studies attribute forest resources not only as attributes of the physical environment, but as attributes of the social and cultural order as well (Lele et al, 1990). As we will see in the analysis of the field survey, need for the accessibility to forest is indicated in the cultural, ecological and economic domains.

Figure1. Feasibility Conditions for Collective Resource Management Initiative:



The above framework suggests that the primary need for JFM initiation is reflected in the Ecological, Economic and Social domains (for *example*: need of forest for livelihood comes under economic domain, and in one village need of JFM arrangement was expressed social domain). The need further inspires willingness to receive such an initiative, provided the other conditions are normal. Willingness prompts to acquire the capacity for necessary action. However, meeting of need is dependent on conducive environment, which in turn is subject to the influence of social, political, economic and ecological domains (Table 1). Conducive

environment facilitates the opportunity for acquiring capacity which in turn could inspire willingness to positively respond to institutional building.

Table 1 : Need analysis

<i>Characteristics</i>	<i>Dependence on forest</i>
Concern for protection of forest	High
Receptivity to institutional Intervention	High
Knowledge of tree species and vegetation	High
Awareness of JFM	High
Agricultural productivity is high	Low
Average size of agricultural land holding is large	Low
Village is close to urban area	Low

2.2 Criteria and *Indicators* (C&I) for Feasibility Analysis

One way of assessing feasibility is to set criteria and look for the *indicators*. According to Hammond, indicators help us to see a trend or phenomenon that is not easily detectable (Hammond et al.). Anderson (1995) described *Indicators* as “readily available, about some thing measurable, meaningful, easy to understand, timely and offer a basis for relevant comparison”. *Indicators* show the links among different aspects of a community and quantify and simplify the information to make it easy to communicate.

The JFM Program to be accepted and adopted by the people, the key domains should cooperate. Criteria help us to focus on the functional factors of the domains. These factors should be robust for the domains to be healthy and sustainable. Indicators help us to understand the health of these functional factors, which determine the feasibility of JFM initiation (Table 2).

Table 2 : C & I Checklist

<i>Domain</i>	<i>Criteria</i>	<i>Indicators checklist</i>
Social	Concern about forest protection Active social organisations. Socio-Cultural and ecological link.	Organised efforts for forest protection. Activities related to cultural, educational and religious environment.
Ecological	Status of Forest	Quality & Quantity of species diversity.

		People concern about forest status. Efforts made/desired for forest protection.
Political	Institutional capabilities Group coherence. Leadership Inter group relation.	Status of common pool resources. Demonstrated organisational skills in different forms of institutions. Conflict resolution practices and results.
Economic	Forest dependency Capacity to invest time and money	Agricultural income, Forestry based income & Non farm income

In the societies where the decisions regarding natural resources are intertwined with social, political and economic processes, the *indicators* help assess level of awareness of people about the sustainable management of resources and their receptivity to the idea of JFM.

2.3. Indicators Evaluation

Indicators serve four basic types of purposes to understand the extent of reliability of an idea, a service or a proposed action. For *example*, we find some *indicators*, which are affirmative. The firm yes or no on a particular thing need not any further investigation. Some *indicators* provide a reliable picture, but they still leave a scope for further investigation. There are some *indicators* discernible in cultural traits and practices. These *indicators* are subject to interpretation. Finally, some *indicators* which certainly highlight the information which may be threatening our cause, and prompt us for immediate action.

Based on a variety of sustainability *indicator* types developed by several scholars. Adapting from many such indicators proposed by many scholars we developed the following indicators that are matching with the realities in our study area.

First are plausible indicators: *Plausible indicators* are transparent. Plausible information tells-this is it, this is not. If the information that indicators provide is positive then it is *Plausible Positive Indicator (PPI)*, if the information is negative then it is *Plausible Negative Indicator (PNI)*. For *example*, there is women's savings group in a village. The loan repayment by group members is regular then it is a clear indication of healthy institutional behavior, which is a *Plausible Positive Indicator*. If the loan repayment is not regular and the group is crumbling then it suggests the poor institutional behavior of the group, which is a *Plausible Negative Indicator*.

Second is **Clouded Indicators**. *Clouded indicators* may be reliable. They may not be reliable too. These indicators give us the clouded information, which may not be accurate. The complete picture is subject to the individual interpretation. If the interpretation is positive then it is Clouded Positive Indicator (CPI), if the interpretation is negative then it is Clouded Negative Indicator (CNI). For example, to the question of alternative leadership the respondents give a little long list of names. This can be interpreted as the immense leadership potential in the village or as a disagreement and a potential for conflict on the choice of future leadership.

Third is **Metaphoric Indicators (MI)**: *Metaphoric indicators* help us see from the cultural perspective of feasibility. The tales, folk songs of local heroes, which reveals the culture of collective action and attachment to forest resources and their management provide *indicators* of feasibility in the cultural roots. *Metaphoric indicators* are presumed to highlight positive information of feasibility.

Fourth is **Vulnerability Indicators (VI)**: *Vulnerability indicators* are definite negative *indicators*. They tell us a limit within which a system can operate. For example, in a village the extents of inter group hatred tells the limits in which the efforts can offer hope. Group conflicts beyond a limit paralyse the society (as we see in one of the villages in the study area) and the society can not receive any new initiative for some time. We need to know these outer limits. *Vulnerability indicators* serve this purpose.

After finding the *indicators*, it is important to measure their accuracy and usability in a given environment. Since all indicators are not positive and equally accurate, they need to be valued differently. The values given to different types of indicators in the following table are used to assess and analyse the feasibility for JFM initiation in the study area.

Table 3. Indicators Value

Indicator Type	Value
<i>Plausible Positive Indicator (PPI)</i>	+2
<i>Plausible Negative Indicator (PNI)</i>	-1
<i>Clouded Positive Indicator (CPI)</i>	+1
<i>Clouded Negative Indicator (CNI)</i>	-0.5
<i>Metaphoric Indicator (MI)</i>	+1
<i>Vulnerability Indicator (VI)</i>	-1

2.4. How to use Indicator Scores for Evaluating Feasibility Criteria

For valuing the quality and reliability of feasibility *indicators* +2 is taken as a benchmark. Less is the quality and reliability of an *indicator* lower is the score. The total positive score of each condition in a given domain is negated by the strength of the total score of negative *indicators*. The number of criteria and the *indicators* available for each criterion are not same in each domain. Hence it is necessary to divide the total score of *indicators* in each domain by the total number of criteria and *indicators* to arrive at a comparable result.

For example, in the following table in one domain there are 4 criteria and 4 Indicators. The positive score of *indicators* add to 3. The negative scores add to 1.5. Total number of criteria and *indicators*, which are 8, should divide the total

indicator score of 2. That means the actual feasibility score of political domain is 0.2 (Table 4). Finally, the total number of domains should divide the sum total of *indicators* of all domains to arrive at the actual score of a given condition of feasibility.

Table 4 : Sample of C & I Evaluation

<i>Condition</i>	<i>Domain</i>	<i>Criteria</i>	<i>Indicator</i>	<i>Indicator type</i>
NEED	SOCIAL	Social harmony	All caste groups in the village came together for the formation of <i>Vanmandali</i> .	PPI (+1)
		Position of social organisations.	There have been efforts to initiate a savings group and Reorganise <i>bajanamandali</i> .	CPI (+1)
		Socio-cultural & Ecological link	Worshipping of forest goddess and gatherings in the forest during festivals.	MI (+1)
	POLITICAL	Thinking about Management of Forest	Community took the initiative for institutional arrangement for management of forest.	CPI (+1)
	ECOLOGICAL	Concern about condition of forest	60 % respondents are extremely worried about the availability of fodder and fuelwood in the near future.	PPI (+2)
			People have pooled money for plantation in the forest area.	PPI (+2)
	ECONOMIC	Dependence on Forest for Fodder & Fuelwood	For 76 % respondents forest is the important source of fodder and fuelwood, but not the only source.	CPI (+1)
		Dependence for other uses.	Fetch additional income from the sale of timru leaves and fruits.	PPI (+1)

(PPI: Plausible Positive Indicator, CPI: Clouded Positive Indicator, MI: Metaphoric Indicator)

(Table 4.Contnd.)

<i>Condition</i>	<i>Domain</i>	<i>Criteria</i>	<i>Indicator</i>	<i>Indicator type</i>
	SOCIAL	Inter-group Relations	Several meetings were held recently by groups to apply for village panchayat land for veterinary hospital	PPI (+2)
		Cooperative attitude at the individual level.	Idea of savings group was received by none	CNI (-0.5)
CONDUCTIVE ENVIRONMENT	POLITICAL	Institutional behavior.	All the local organisations function smoothly.	PPI (+2)
		Leadership Integrity	There Is no agreement on who should lead the proposed FPC.	CNI (-0.5)
		Awareness about JFM	Only 25 percent respondents are aware of JFM.	CPI (+1)
		Relationship with the forest department	20% respondents said that FD is with encroachers thus should not be the part of <i>Vanmandali</i>	PNI (-1)
	ECOLOGICAL	Forest status & its usability in future.	Status of forest is good wherever it is cared. Erosion of the knowledge of forest	PPI (+2) PNI (-1)

(**PPI: Plausible Positive Indicator, CNI: Clouded Negative Indicator, PNI: Plausible Negative Indicator**).

Formula for the evaluation of *indicators* of feasibility:

1) Total value of indicators in each domain = *Positive Indicators - Negative Indicators*

2) Actual domain score =
$$\frac{\text{Total Indicators score}}{\text{Number of Criteria + Indicators in the respective domain}}$$

3) Condition Score =
$$\frac{\text{Total value of domains}}{\text{No. of domains}}$$

4) Actual Feasibility Score of a Village =
$$\frac{\text{Total Value of Conditions}}{\text{No. of Conditions}}$$

Table 4a. Consolidated Scores of Indicators in the Sample Situation:

<i>Condition</i>	<i>Domain</i>	<i>Indicators Value</i>	<i>Total No. of C&I</i>	<i>Domain Score</i>
Need	Social	3	6	0.5
	Political	1	2	0.5
	Ecological	4	3	1.3
	Economic	2	4	0.5
CONDITION SCORE: 0.7				
Conducive Environment	Social	1.5	4	0.3
	Political	1.5	8	0.2
	Ecological	1	3	0.3
CONDITION SCORE: 0.26				
FEASIBILITY SCORE: 0.48				

The purpose of *indicators* in the present study is to help us understand the condition of feasibility. The criteria of deciding quality and reliability of an *indicator* differ according to specific condition (i.e. need / willingness / conducive environment / capacity), that it is supposed to support. For *example*, economic backwardness demands the support of forest based income. Hence it becomes a positive *indicator* to the condition of “need” of the institutional arrangement for forest management. The existence of need is one of the contributing factors of the feasibility of JFM initiative. On the other hand, extremity of same situation reflects negatively on the capacity of community to work for such institutional arrangement. Hence it becomes a negative *indicator* in the context of the condition of capacity of community. The priority of development interventions in this kind of situations should be to focus on enhancing livelihood opportunities in the village.

3 The Study area

Sabarkantha district is situated in the northern part of Gujarat. The district consists of two main geological sub divisions, the hilly range in the north and east and the plains. The Aravali range covering in the northern and eastern boundaries takes a southward turn at the border of the district. The main source of irrigation in the district is wells and canals (Bhatt, 1998). The district is predominantly a tribal area where education, communication, energy, irrigation and commercial facilities are not some thing to boast about. Forests offer important source of food and energy requirements for many landless and marginal farmers in the district.

Bhiloda taluka is located in the hilly region of the district. JFM was initiated in this taluka in 1989. Forest department has taken support of NGO’s for initiation and

strengthening of JFM in this taluka. Some of the Forest Protection Committees (FPC) in the taluka have seen phenomenal progress in terms of ecological and social development and became a focus of study for development thinkers and practitioner in India and abroad. During the last 10 years, 41 of the total 126 villages have adopted JFM, covering 10,000 hectares of forest area (Srinivas & Kumar, 1999).

4 Bhavanpur Village

Bhavanpur village throws a complex picture. It has all elements of socio political restlessness, typical of a factionalised village. Of the 200 households in the village 113 belong to Adivasi and the rest i.e. 87 belong to Thakerdas casts. A high way road divides the settlements of Adivasis and the Thakerdas. Most of the Adivasis settled at the foothills, close to the forest area. There is a deep division between Thakerdas and Adivasis owing to conflict around the forest area. The in-depth interviews with several persons in the village have revealed the background of conflict between these caste groups.

4.1 Social and Economic Profile

Demographic and economic profiles give us the clue for priorities and preferences made by different groups and individuals. Thakerdas were the only community lived in this village and enjoyed free access to forest resources, until neighborhood landlords brought families of adivasis six decades ago to assist in timber cutting.

Over the years adivasis utilised every opportunity to strengthen their position in the village. Today Adivasis are ahead of thakerdars in population, resources, education, trade and even services. With improved livelihood they have been able to invest in assets, and provide higher education to the children. Thakerdas, who consider they to be original natives of the village, feel being over powered by Adivasis. The ‘encroachment’ on the forest area by a few Adivasi families has added to their anguish. They feel helpless and disillusioned.

Majority of families from both the caste groups needs forest for fodder and fuelwood. Many thakerdas are willing to adopt JFM along with Adivasis. But a powerful family group, which is determined not to allow JFM, is controlling Adivasis consent. Why some people are keen about JFM and why not some others? is the village ready to adopt JFM and what should be the approach? The following social, demographic and economic indices provide clues to finding answers to these questions (*Tables 5 & 6*).

Table 5 : Population

Category	Adivasis	Takerdars	Total
Households	113	87	200
Female members	288	202	490
Male members	284	186	470
Children	57	27	84
Total	629 (60%)	415 (40%)	1044

Table 6 : Economic Profile

Category	Adivasi	Takerdhar	Total
Farmers	98 (86%),	75 (86%)	173 (86%)
Service	10 (8%)	2 (2%)	12 (1%)
Traders	5 (4%)	1 (1%)	6 (0.5%)
Cultivable area	288 acres (70%)	121 acres (30%)	409 acres
Irrigated	201 acres (64%)	114 acres (36%)	315 acres (77%)
Non-irrigated	87 acres (92%)	7 acres (8%)	94 (22%)
Cultivable area per family	2.5	1.3	2 acres
Fruit Trees on farm lands	315	125	440
Cattle	364	285	649
Cattle's per family	3	3	3
Goats	317	128	445
Goats per family	3	1	2
Motor Pump	5	Nil	5
Cycle	46	10	56
Scooter	4	1	5
Jeep	1	Nil	1
Tractor	1	Nil	1

The glaring feature in the above tables is the inadequate livelihood options, particularly in the case of Thakerdas community. On an average each Thakerdar family of 5 members owns a cultivable area of 1.3 acres (i.e. 0.4 acre per individual). The overall average of the village is 2 acres for a five-member family. The differential extra land is owned by Adivasi families, i.e. each Adivasi family of 6 member owns 2.5 (0.4 acre per individual) acres of cultivable land.

Both Adivasis and Thakedas own 3 cattle per family. On an average each Adivasi family rear two goats while it is one goat per family in the case of Thakerdas. Further the other assets like cycle, motor pump, tractor etc. proves Adivasis economic dominance over Thakerdas.

What is explicit from the figures is the need for livelihood support system, which is the reason why some of the Thakedas and Adivasis families expressed keen interest in the JFM arrangement. There are two types of opposition to JFM in the village. One is active opposition, which with vested interests attempt to thwart the efforts.

The second is the passive opposition, which do not oppose but contributes to the dilution of efforts with non-cooperation and pessimistic remarks. This is basically a struggle between those who need JFM kind of arrangement and those who do not need it.

Apart from economic domain need is expressed in social, political and ecological domains. The assessment survey of JFM revealed that, though the majority is not aware of JFM, has expressed desire for access to and role in forest management.

4.2 Village Forest

Jhalabhai a senior person in the village, recalled the situation of forest during his youth. Six decades ago, the forest area was dense and inhabited by a variety of wild animals including, tigers, panthers etc. During those days, many people in the village knew the medicinal values of the forest. Use of roots, leaves and stems of certain plants for curing diarrhea, fever etc. was a common practice. This knowledge has perished along with the older generation.

4.3 Forest Use

A few wealthy Adivasi families protect and control 50 hectares of the total 200 hectares of the forestland. Except this area the rest of the forest is barren and degraded. These families enjoy exclusive benefits of this protected area and do not allow access to others for fodder, fuelwood and any other use.

4.4 Village Organisations

Kantaben runs the local balwadi. She passed 10th standard, which is sort of an unusual achievement in this area. Villagers respect her for her knowledge and good ideas. She along with Harkhibhen, another educated women initiated a bajan mandali a few years ago. Mandali has attracted a number of women. The mandali members used to meet every Saturday in Kantaabhen's house. On every purnima day the mandali members go for pilgrimage. This unity has led to some more progressive aspirations. Building on their collective energies, the members decided to strive for eradication of alcoholism, non-vegetarianism and gambling in the village. Very soon the men began to restrain their wives from attending these meetings. Eventually, bajanmandali had to be closed.

There was an attempt to start a dairy cooperative in the village by Motibhai under the Gokul Gam Yozana of the Government. He has held several meetings in the village to get across his idea. People refused, for it requires monetary investment. Motibhai even offered to invest money on their behalf and asked them to just promise the regular supply of milk. They were not convinced. Instead they questioned him "why would you invest your money unless you have some benefit in it"?. Finally he had to drop the idea. According to him, after losing their money

to Valjibhai for JFM initiation, people have stopped trusting any body and refuse to contribute money for any occasion.

Sharadabhen offer another *example* for pervasive cynicism in the village. There are a few water taps meant for drinking water. Given the size of the village, the taps are too far for a number of households. She requested the panchayat to dug pipelines to individual households. Panchayat agreed but with the condition that fifty percent of the money to meet expenses should come from the village. Villagers have refused to contribute, since they did not believe in the possibility of getting pipelines arranged.

4.5. Leadership

“We need a leader who is feared and respected by both Adivasis and Thakerdas”, said a village elder. According to him there indeed was a leader called Narsingh Thakore, many decades ago. He commanded respect from both Adivasis and Thakerdas. During his leadership both sections had a free access to forest area. He made both the groups protect and manage the forest. The system broke after his death and Adivasis asserted their exclusive right on the portion of forest area. Now there is a leadership vacuum in the village.

Leadership can not develop in an environment where initiatives are shot down instantly. There is also a diverse opinion on the potential leadership in the village. To a question, in the sample survey among the Thakerdas, whose leadership will you accept?, respondents suggested 10 different names. Criteria were unanimous that the person should be reliable. It came out later that the names of the persons suggested by the individual respondents belong to his or her own relation.

4.6 Conflicts

The Thakerdas of the village are keen about having the forest area under JFM, so that they're right to use the forest is restored. However, these Adivasi families fear that they will lose their free access to the forest, protected and managed by them, and aggressively oppose any initiative of community forest management. The majority in the village fears the determination and violent posture of these families and does not dare push their way in to bringing forest area under common use. According to them, the efforts of regenerating degraded area were thwarted by these Adivasi families. They fear that once forest use and management by majority is in place, it will gain strength to annex the forest area presently controlled by them also.

From the viewpoint of Valjibhai Sadat and Nemabhai Jivabhai, leaders of the forest-using group, Thakerdas have never been bothered to protect the forest. “They are only interested in exploiting it. They often let their cattle graze inside the forest and indulge in illicit felling of trees. Even the twigs are not spared, the reason why most of the forest area is degraded”. They argue that the Thakerdas are just jealous

of them and are not genuinely interested in forest protection. “Once allowed to enter, they will cut all the forest, which we have developed over the years”. These two leaders are not confident that forest department beat guards can be effective in ensuring forest protection. “They seldom visit the area and are not really keen about protection”.

According to Jhalabhai, villagers worshipped a forest goddess Amarai Mata. In the past villagers used to gather in the forest and celebrate Amrai mata puja with colors and songs. The practice vanished along with the forest. Festivals like Diwali and Holi were also celebrated with grandeur. Now people are not enthusiastic to come together and celebrate. The reason according him is that people became divisive. The rise of alcoholism led to frequent quarrels and mutual non-cooperation in the village.

4.7. Awareness About JFM

In Bhiloda taluka about 40 villages have adopted JFM. The information about JFM in these villages reaches to other villages through a variety of ways and creates a certain image. In the survey it is found that about 30 percent of the respondents are aware of JFM. Each of them knows it in each different way (Table 7). A friend from Abhapur village, which has adopted JFM 10 years ago, informed one respondent about JFM. For another respondent the information was brought by the newly wed daughter-in-law, whose native village has JFM program.

To a question as to whether they were satisfied with the condition of forest, 70 percent answered negatively and 50% said *vanmandali* should be formed to protect and manage the forest. Another 50 % opined that villagers alone should be allowed to manage it without the intervention of Forest Department. The need for a mechanism to protect and manage the forest and awareness and acceptance to JFM to a great degree nullified by the hostile environment prevailing between two communities.

Table 7 : Awareness about JFM

<i>Issue</i>	<i>Yes (%)</i>	<i>No (%)</i>	<i>Respondents suggestions for better forest management</i>
Satisfied with the status of forest.	30	70	<p><u>What should be done to improve the condition of forest:</u></p> <ul style="list-style-type: none"> • Villagers themselves should protect and manage the forest (50%) • FD must put more efforts for forest protection and management (20%) • Forest guard must visit the forest every day. (10%)

			<ul style="list-style-type: none"> • Vanmandali should be formed (50%)
Informed of JFM	30	70	<ul style="list-style-type: none"> • Source of information about JFM: • Forest Guard • Gram Panchayat Discussion • Through a friend in Abhapur village • The village from where daughter-in-law hails practice JFM. • During a visit to Kheranjia village
Has been contacted for JFM initiation.	7	93	

Percentages given in the respondents' suggestions column indicates the choice made by certain respondents. Suggestions in this column are not comparable. Hence, percentages are independent and should not be added to see the total figure. For *example*, one respondent could suggest that all these measures are important for the protection of forest while some other believed in only one of the measures.

4.8 JFM Initiatives in the past

JFM initiatives in the past were nipped in the bud. Several reasons expressed by the villagers. According to Chimanbhai Sadat another senior person in the village, people are apprehensive about any body in the village who talks about JFM because of a bitter experience in the past.

Few years ago Chimanbhai took JFM initiative by organising village elders for JFM arrangement. A membership of fifty rupees per household was decided and collected. Unfortunately Valjibhai, who was made president of the committee, swindled the money. Villagers could not do any thing, for he is too powerful person to bow to the pressure of the villagers. No body could dare to question him. Ever since this incidence, people became pessimistic and don't easily cooperate with any such effort. An officer of Insurance Company, who is familiar with this village, shared this view. He opined that people are too scared of Valjibhai and can not think of annoying him.

The women sarpanch of the village, Sharadabhen views the things differently. According to her, many Thakedhar hamlets have cultivated land near the forest area but they are not interested in forest protection and management. They think that it is the job of Adivasis. She said, she attempted to bring those Adivasi families who do not have a share in the protected forest and Thakerdas to develop the unprotected forest area. But they have refused to work with Adivasis, thinking it is below their dignity. Some even casted aspersions to her efforts saying, "she makes these efforts since her family buys fuelwood from the market and it is for her benefit to protect the forest".

Some of the forest officers have explained their futile efforts of initiating JFM in the village. A number of meetings were held by the forest department to bring

together the quarreling groups but in vain. An officer, who initiated JFM in a number of villages in Bhiloda Taluka opined that, “efforts could not succeed because a section in the village is determined to fail these initiatives”.

Lalitaben, a relative of Valjibhai offered a new dimension to these conflicts. According to her, the Adivasis, who are not settled at the foothills, have no access to the forest area. JFM is the only solution to restore people’s right to use the forest but that can not happen since Valjibhai enjoys a good rapport with a local forest officer, who is supposed to be promoting JFM in the village.

4.9.Criteria and Indicators for JFM Feasibility

The awareness survey, socio-economic survey and the individual interview with village elders helped us to see the indicators of the conditions from the perspective of feasibility for JFM initiation. We classify here the four conditions believed necessary for institutional initiative for resource management in two groups and draw indicators from the above analysis. We believe that need and conducive environment are fundamental (*Tables 8a,8b,*) conditions on which willingness and capacity can develop (*Table 9*).

If need exists, the possibility of its fulfillment is subject to the extent of conducive environment prevailing. If people believed that JFM can be the means of fulfilling the need of resource use then there will be willingness for JFM arrangement. The issue that arises then is the extent of their institutional capacity. The past history of institutional norms and behaviors give us the indications of their capacity and guide us to appropriate approaches and strategies for capacity building keeping in view the overall environment.

Table 8(a) : Conditions, Criteria and *Indicators* for JFM Feasibility analysis

<i>Condition</i>	<i>Domain</i>	<i>Criteria</i>	<i>Indicators</i>	<i>Indicator type</i>
Need	SOCIAL	Concern for forest protection	Vast stretch of forestland is left unprotected.	CNI
		Socio-cultural & Ecological link	Worshipping of forest goddess and annual gatherings in the forest on a festival day. Active participation of women in <i>bajanmandalis</i> <i>Bajanmandali's</i> attempt to influence social environment.	MI MI CPI
	POLITICAL	Thinking about Management of Forest	30% respondents are aware of JFM. Initiative for <i>Vanmandali</i>	CPI PPI
	ECOLOGICAL	Concern about condition of forest	70% Respondents are unhappy with the condition of forest. Degraded forest 3 cattle & 2 goats per family with 5 members and only 2 acres of cultivable land. Conflicts over grazing in the forest area	PPI PPI CPI CPI
	ECONOMIC	Dependence on Forest for Fodder & Fuelwood Dependence for other uses	Small land holdings with low productivity Assets are few Only 6% are in service and 1% in trade. Timberwood for house construction	PPI CPI CPI PPI

<i>Condition</i>	<i>Domain</i>	<i>Criteria</i>	<i>Indicators</i>	<i>Indicator type</i>
Conducive Environment	SOCIAL	Inter-group relations	Encroachment on forest land.	PNI
			Frequent conflicts & bitterness between two groups.	PNI
		Cooperative attitude at the individual level.	Partial or no support for the initiatives like <i>Bajanmandali</i> and dairy	CNI
			Organisations collapsed in the past and new efforts lack support	CNI
	POLITICAL	Institutional Behavior	Thakerdas are willing to work with Adivasis	CPI
			Even important festivals like holi and diwali are not celebrated.	PNI
			Villagers' disinclination to contribute for the arrangement of water pipes.	CPI
		Leadership integrity	Both groups worked together for forest protection under a strong leader in the past	PNI
			No challenge to the Adivasi leader who swindled money.	PNI
			No common agreement On leadership.	CPI
		Awareness about JFM	30 % respondents are aware of JFM.	CPI
		Relationship with FD	Suspect local forest officer to be in connivance with the forest controlling group.	PNI
ECOLOGICAL	Forest status & its usability in future.	Status of forest is good wherever It is cared.	CPI	
		Erosion of the knowledge of forest	CNI	

Table 8b: Willingness and capacity indicators

Condition	Criteria	Indicators	Indicator type
Willingness	Past history of collective action.	Villagers organised for <i>Vanmandali</i> in the past but was cheated.	CPI
	Present status and efforts for collective action.	50% respondents Favored JFM. Some of them have approached FD for it.	CPI
Capacity	Organisational	The warring factions vote in unison during the elections.	CPI
		Village elections are held smoothly with mutual cooperation.	CPI
	Institutional.	Failure of <i>bajanmandali</i> & Dairy Coop.to take institutional shape	CNI
	Leadership	No leader commands the respect of all sections.	CNI

Table 9 : Consolidated scores.

Condition	Domain				
	Social	Political	Ecological	Economic	Total
Need	0.5	1	1.2	1	0.9
Conducive Environment	-1	-0.25	-0.08	N.A	-0.4
Willingness	N.A	N.A	N.A	N.A	0.25
Capacity	N.A	N.A	N.A	N.A	0.1
FEASIBILITY SCORE: 0.2					

N.A : Not Applicable

4.10 Conclusion

The village economy is based on agriculture, which is just adequate to meet their needs. Those with very small landholdings face hardship for fulfilling their day to day water and energy needs. The situation is relatively better in the Adivasi households. However this better situations is only in the context of few people who are also against JFM in this village. These few have also been a source of conflicts in the village. This apart, prevalence of old believes, rising alcoholism and lack of mutual trust put feasibility in doubt.

However, in the absence of an institutional mechanism that ensures equal access to the resources to all the communities, JFM kind of arrangement indeed becomes crucial. Therefore the need for JFM was indicated more profoundly in the political domain than in other domains. Politics do not deal with basic livelihood systems. It deals with social power and prestige. The strong urge for JFM by certain groups is a means to restore their pride by correcting felt unjust done to their legitimate right over resources by another powerful section. The need is reflected poorly in the ecological, social and economic domains substantiating the argument that JFM was sought more for political reason than for these considerations.

Similarly, willingness scored low, meaning there is a strong willingness for JFM, but this willingness is negated by lack of capacity to organise and institutionalise the resource use and protection.

Knowledge of political dynamics is extremely important for the initiation of any developmental project which otherwise will result in rising sectoral specific aspirations among certain groups while alienating others. Initiatives like JFM in this village may have to wait for or create first politically conducive environment to ensure majority acceptance and participation. The emphasis in the event of such initiative taking place should be on developing capacity for institutional building in the village.

5. Village Virpur

Virpur is a small village of 350 population, 95% of which belong to Adivasi community. Youth constitute a majority of the population (Table 10), which seem to hold a promise for future in this village otherwise plagued by serious conflicts of violent nature. The neighboring villages are Chitrodi in the North, Kanadar in the South, Chorimala in the East and Kherva in the West.

Table 10. Demographic Picture

<i>Age Group</i>	<i>Male Population</i>	<i>Female Population</i>
0-10	56	38
11-20	36	24
21-30	48	39
31-40	25	22
41-50	23	25
51-60	05	01
Above 60	07	06
Total	200	152

5.1 Socio Economic Environment

Except a primary school there are no other facilities in the village. The secondary school is in village Chorimala and the college is in shayamlaji. Nearest Bank is in Kanadar village and post office, dispensary and veterinary doctor are in Bhiloda. Despite of these limitations, the village has produced relatively a good number of graduates (Table 11). Similar is the rate of people who are in white-collar jobs. This job holding population seem to be contributing to the unusual income figures for a village of this kind where largest individual land holding size is less than 15 acres (Table 12).

Table 11. Socio Economic Profile

Education	
Graduates	5%
Above 10th standard	25%
5-9th standard	20%
Below 5th standard	13%
Uneducated	20%
Income categories (Per annum)	
Income category (Rs.)	No.of families
50,000-100,000,00	05
25,000-50,000	06
10,000-25,000	09
Below 9,000	37

Table 12: Assets and Resources

<i>Category</i>	<i>No. of Possessors</i>			
	15-20	10-5	5-10	below 5
Irrigated Land (acres)	-----	----	01	48
Non irrigated land (acres)	nil	nil	nil	5
Cattle (No.s)	nil	1	13	34
Goat	nil	03	21	33

5.2. Forest Use

Virpur Village has 79 hectares of forest area. Forty percent of fodder needs and sixty percent of fuelwood requirements of the village are met from the forest (Table 13). Some families also collect timru leaves and sell them in the nearby market. About 50% families graze cattle in the forest.

The village formed a vanmandali in 1995, which was collapsed in the same year. In the absence of any institutional control a powerful group is exploiting the forest. Forest is also under the pressure of illicit cutting and pilferage by people from Chitroda and Chorimala villages, which apparently do not have adequate forest resource. Villagers feel there is not enough attention by forest department in this area.

Table 13. Fodder and Fuelwood Sources

<i>Source</i>	<i>Fodder</i>	<i>Fuelwood</i>
Farm produce	20%	25
Border plantation	10%	15%
Forest	60%	60%
Other sources	06%	03%

5.3. Village Level Organisations

The efforts of forming *vanmandali* had produced a bad leader. The person who organised the people, collected money has used it up for him self. He with his gang of supporters enjoys unauthorised control over the forest. There was a milk cooperative, which also was collapsed due to non-payment of loans taken by the villagers for procuring cattle.

The village youth have formed a savings and credit association, which is functioning smoothly. Emerging youth leadership is the silver line in the depressing environment in this village. Some elders in the village feel that the things will improve if youth are trained and encouraged to assume political leadership. According to them, there is no platform for people of different groups to come together for any purposeful action. The leaders of rival groups let the conflicts continue and discourage any rapprochement.

5.4. Conflicts

There are five hamlets in the village, deeply divided into two splinter groups. Each group has the affiliation of two different political parties and their clashes find platform in the panchayat meetings also. Further, one of the group member was killed in the clashes and this group seem to be wanting for a revenge.

5.5. Awareness about JFM

The sample survey conducted among 56 respondents from all the five hamlets shows that more than 80 percent are concerned about the status of forest and all of them say that there is a need for arrangement for forest protection (Table 14).

Table 14. JFM awareness

<i>Issue</i>	<i>Yes (%)</i>	<i>No (%)</i>	<i>Respondents suggestions for better forest management</i>
Satisfied with the status of forest.	17	83	<u>What should be done to improve:</u> FD & Villagers should work together (29%) Villagers alone should manage it (29%) Villagers should form a committee and manage with support of FD (23%). FD alone should do it (11%) It is the duty of FD, but villagers also should contribute (29%).
Is there a dependence on forest.	89	11	<u>Major Dependence on Forest for:</u> Fuelwood, fodder, timru leaves etc. (26 %) Timber for houses: (17%) Only for fodder and fuelwood (35%) For farm equipment (4%).
Informed of JFM	4	96	
Should there be an Institutional mechanism for forest protection	100	nil	Protection is needed.... To check erosion (11%) To stop hillocks look bald (6%) To check the intrusion of outsiders (47%) To ensure sustained availability of fodder and fuelwood (23%).

Even though there was JFM in the past, 96% respondents were not aware of JFM. However, 29 % respondents felt that villagers and FD should work together to improve the condition of the forest. The same number of respondents felt that villagers alone should be allowed to manage the forest while 11% said it is the responsibility of the FD alone.

Twenty nine percent agreed with the view that it is primarily the responsibility of the forest department to manage forests, but it needs active contribution on the part of villagers.

The major dependence on forest according the majority is for fodder and fuelwood. Among others, for 17% respondents forest is an important source of timber, while it is farm equipment for 4% of them. On the reasons why forest should be protected and managed 11% respondents said to check soil erosion, 47% said to stop the intrusion of outsiders and 23% said to ensure sustained availability of fodder and fuelwood. Aesthetic sense also prevailed with 6 % wanting to stop hillock look balded.

The survey established the fact that when it comes to the protection and sustainable management of forest majority in the village thinks on the same lines. Though they may are not aware of the program called Joint Forest Management, majority of them do aspire for what JFM intends to achieve.

The survey also reveals that villagers want an arrangement for the protection and management of forest. Because they depend on it forest fuelwood and fodder and feel that it belongs to them. Hence they do not want the “forest land (hillock) look bald and ugly”. Apart from the need there is a sense of pride and aesthetics involved in their concern for the forest.

5.6. Conditions, Criteria and *Indicators* for JFM Feasibility analysis

Table 15a. Need and Conducive Environment

<i>Condition</i>	<i>Domain</i>	<i>Criteria</i>	<i>Indicators</i>	<i>Indicator type</i>
Need	SOCIAL	Concern about Forest protection.	6% respondents are concerned about hillocks looking bald.	PPI
			47% respondents are concerned about the intrusion of outsiders	PPI
			About 50% families graze cattle in the forest..	PPI
		Socio-cultural & Ecological link	Information not available	
	POLITICAL	Thinking about Management of Forest	100 % respondents said that there is a need for institutional mechanism for managing forest.	PPI
	ECOLOGICAL	Concern about Condition of Forest	83% respondents expressed dissatisfaction about the condition of forest.	PPI
			11% respondents are concerned about soil erosion.	CPI
	ECONOMIC	Dependence on Forest for Fodder & Fuelwood	More than 50 percent own less than 5 acres of land.	CPI
			60% population depend on forest for Fodder and Fuelwood.	PPI
		Dependence for other uses	17% respondents said they need timber from the forest for house construction.	CPI

(15a...)

<i>Condition</i>	<i>Domain</i>	<i>Criteria</i>	<i>Indicators</i>	<i>Indicator type</i>
Conducive Environment	SOCIAL	Inter-group Relations	Factionalism with the backing of political parties.	PNI
			Murder of a group member.	PNI
		Cooperative attitude at the individual level.	Failure to pay back loans taken from the dairy cooperative.	CNI
			11% respondents said forest management is the responsibility of FD alone.	CNI
			But about 30 % respondents also said though it is the responsibility of FD Villagers do have a role to play.	CPI
	POLITICAL	Institutional Behavior	Collapse of both vanmandali and dairy cooperative	PNI
			Absence of a platform for discussion or a dialogue.	PNI
		Leadership Integrity	One who established leadership swindled the money collected for vanmandali.	PNI
			Elected sarpanch joined hands with this person.	PNI
			Villagers to failed to name a leader who can be acceptable to all	PNI
		Awareness about JFM	95% are not aware of JFM.	PPI
Relationship With FD	Villagers feel FD neglected their forest. They no body from FD except forest guard.	CNI		
	ECOLOGICAL	Forest status & its usability in future.	Forest is still under active use for fodder & fuelwood	PPI

Table 15b. Willingness and capacity indicators

<i>Condition</i>	<i>Criteria</i>	<i>Indicators</i>	<i>Indicator type</i>
Willingness	Past history of collective action.	Collapse of Vanmandali and dairy.	CNI
	Present status of efforts for collective action.	Youth association is active. 100% respondents said there should be a committee for forest management with the help of FD.	PPI
Capacity	Organisational	Villagers failed to prevent an individual swindling their money.	PNI
	Institutional.	Efforts in the past for vanmandali failed and there are no renewed efforts.	CNI
		Organisations started earlier failed to institutionalise contributions.	CNI
	Leadership	No challenge to the leadership of a person who cheated earlier.	PNI

Table 16 Consolidated scores.

<i>Condition</i>	<i>Domain</i>				
	Social	Political	Ecological	Economic	Total
Need	1.5	1	1	0.8	1.1
Conducive Environment	-0.2	-0.4	1	N.A	0.1
Willingness	0.3				
Capacity	-0.4				
FEASIBILITY SCORE: 0.3					

5.7. Conclusion

In this village indicators of need and willingness are strong while there is less of a conducive environment and capacity. As we discussed in the previous pages, indicators for internal fluids are profound, so also is the reflection of need for JFM kind of forum in the political domain.

Notwithstanding the need and majority's willingness for JFM, the violent nature of conflicts put the feasibility in doubt. However, the youth activities offer some promise that the attention of the villagers could be directed to developmental process from the restless conflicts. Similarly, majority respondents of the village are willing to work for JFM since they feel it can ensure sustained availability of fodder and fuelwood. Before JFM initiation the village youth may be organised and be trained in institutional development.

EPILOGUE

6. Feasibility, Viability and Sustainability

Inherent in the question of feasibility is the long term Sustainability of a project. However, the tendency among the many developmental projects is to measure feasibility in the context of financial viability alone. The fact is that no project is viable in all the sub-sects and viable for all the times to come. If the viability of a project in all the sub-sects of a system is in a question then, the project may not be able to sustain for a long time, hence is not feasible.

Sustainability of a project is not a set goal but is a process in which where there is a harmonious balance between various sub-sects of the system. The pace of achieving harmony between various subsets varies in different projects and different systems, depending on the strength and weaknesses of a particular system. The purpose of the feasibility study for a project is to identify the weak and strong areas of a system and decide appropriate objectives, course of action, time frame and resources depending on the strengths and limitations of a particular agency or the organisation.

There can be many conditions that need to be present for the feasibility of a developmental project. In the context of JFM, we considered Need, Willingness, Conducive Environment and Capacity, of the community as fundamental conditions for the feasibility. Of the four villages where this concept was used to assess the feasibility of initiating JFM, there is no village where all the conditions are present in equal rigor.

Table 17. An overview of feasibility conditions in the study area

<i>Village</i>	<i>Need</i>	<i>Conducive Environment</i>	<i>Willingness</i>	<i>Capacity</i>	<i>Total Feasibility Score</i>
Bhavanpur	0.9	-0.4	0.25	0.1	0.2
Virpur	1.1	0.1	0.3	-0.4	0.3

We consider that need is the primary and most essential condition for the feasibility of a project. From historical perspective, the gradual decline of the other conditions gave rise to the stronger need for JFM in the study area. However, the JFM to be sustainable the efforts should go along to minimise the impact of this negative setting in the village.

14. Reference:

Anaymous, "JFM in Gujarat: Current Status and Strategies for Future", *an unpublished document*, 1998.

Anderson, P (Ed), "The progress of nations", *UNICEF*, Newyork, 1995.

Bates, R.H . "Contra Contractarianism: Some reflections on the new Istitutionalism". *Politics and Society*, 1988.

Bhatt, S.C, (ed.), "The Encyclopedic District Gazetteers of India, Vol. 7", *Gyan Publishing House*, New Delhi, 1998

Hammond, Allen, Adriaanse, Rodenburg, Eric, Bryant, Dirk, Richard, Woodward, " Environmental Indicators", *World Resource Institute*, (undated).

Lee, G. Robert, Field, R. Donald & Buch, Jr, R William, " Community and Forestry", *Westview Press*, London, 1990.

Mukerjee, Neela, "Why JFM failed to Deliver? A Case Study of Arjuni Mouza, Midnapore (West Bengal)", *Indian Forester*, June, 1997.

Singh, Katar, "The Emergence and Survival of Cooperation: A Review of Some Theoretical Propositions", *National Seminar on Rediscovering Co-operation*, Institute of Rural Management, Anand, 1996.

Srinivas, M & Kumar G. Sujit, "Building Bridges for Empowerment through Joint Forest Management: VIKSAT's Experience", *Pre-Workshop Volume, National Workshop on Joint Forest Management*, 25-26 February, Ahmedabad, 1999.

ACRONYMS

GEER	Gujarat Ecological Education & Research Foundation
JFM	Joint Forest Management
FD	Forest Department
NGO	Non Government Organisation
VIKSAT	Vikram Sarabhai Institute for Development Interaction
FPC	Forest Protection Committee
NTFP	Non Timber Forest Produce

Authors Addresses: 1) N Harikrishna, Program Coordinator, OxfamGB. No. 302, 9/19/35, Jasper Apartments, CBM Compound, Visaka Patnam, 530003, India, Telephone: +91 891 755526, Fax: 755527, Email: nharikrishna@oxfam.org.uk, riha@indiatimes.com

Dr. Anandi Mehra, Flat No. 5, Amish Park, Above Shopping Complex, B/H Susan Textiles, Makarapura, Baroda-10, Telephone: +91 265 648756, Email: m_anandi@hotmail.com