

Do Local Villagers Gain from Joint Forest Management? Why and Why Not?

Lessons from Two Case Study Areas from Andhra Pradesh, India



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Lessons from Two Case Study Areas from Andhra Pradesh, India**

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September 2008

Japan International Cooperation Agency

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Abbreviations

Term	Explanation
AP	Andhra Pradesh
BC	Backwards Caste
FD	Forest Department
FPC	Forest Protection Committee
JFM	Joint Forest Management
MC	Management Committee
NGO	Non-Governmental Organization
NTFP	Non-Timber Forest Products
OC	Other Caste
SC	Scheduled Caste
ST	Scheduled Tribe

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Summary of the Report

Introduction

Until late 1980s, national forest policies in India was characterized with a top down approach, which was mainly led by the state's interest to maximize commercial revenue from forests, which prohibited local villagers' access to forests¹. During the last decades, however, the top down approach has been increasingly questioned in the Indian contexts. The rapid degradation of forests made visible practical failures of the state in managing forest resources which are dispersed in vast areas. Frequent conflicts arose between the Forest Department (FD) and those who are dependent on forests over use of forests. At the same time, both national and international criticisms intensified by Non-Governmental Organizations (NGOs) and donor agencies against the top down approach due to its failure to conserve forests as well as due to its neglect of the needs of the rural poor. Such criticisms were further strengthened because of the recent awareness of the vital role that forest resources play in supporting the livelihoods of the poor people within and around forests and utilize forests for both subsistence and income². According to Khare et al. (2000), among the 300 million estimated to live below the poverty line in India, 200 million people are dependent on forest resources for their livelihood.

In response to these problems, in 1988, the new national forest policy was redefined in a way that displays a drastic shift in terms of policy objectives. In the new policy, a focus on forest conservation replaced maximization of revenue from forests as the main objective. The new policy also showed the official recognition of the importance of meeting the livelihood needs of the forest dependent population for fuelwood, fodder, minor forest produce, and small timber. Following the new agenda, the Ministry of the Environment and Forests issued a guideline to all states in 1990 to adopt Joint Forest Management (JFM). The objective of JFM was to achieve better forest resources conservation by creating partnerships between FD and Forest Protection Committee (FPC)s³.

The formal recognition of local villagers as co-managers of forests and the active recognition of their rights to forest products seem attractive arrangement for local communities. Since its inception, the number of JFM FPCs has shown an exponential growth: as of 2006, 27 % of Indian forests (17.3 million hectares of forest land) are reserved for 85,000 JFM FPCs⁴. Many donor agencies such as the Japanese Bank for International Cooperation and World Bank have provided financial support to JFM initiatives.

In spite of the proliferation of JFM FPCs across India, however, the JFM initiative has been the subject of growing criticisms and concerns of many scholars and NGOs as follows. The first criticism relates to the limited benefits which FPCs receive from JFM. The second criticism relates to the question of inequitable distribution of the benefits among the FPC members. A final criticism relates to potential adverse impacts of JFM on inter village benefit distribution.

¹ Poffenberger (2000), Agrawal (2005)

² Byron and Arnold (1999), Angelsen and Wunder (2003), Scherr et al. (2004)

³ Khare et al. (2000)

⁴ World Bank (2006)

Objective

Drawing on the empirical study of JFM project in Andhra Pradesh State of India, this report aims to investigate how JFM implementation affects abilities of variable local actors to benefit from forest related activities and to identify the reasons which enable or disable such abilities of local actors. The report selected two study areas for a case study: Khammam district and the Medak district from Andhra Pradesh, which differ in terms of degree of forest abundance, size of villages, and caste composition.

Case study

The cases from the Khammam district and Medak district study areas showed significantly different local level processes and diverse effects on local actors' access to forest derived benefits as follows.

In the case of Village A and Village B in the Khammam district, the FD dominated all the local processes from FPC constitution to implementation of decisions and rules. Thus, FPC members demonstrated little interest of FPC members in the JFM project. Many villagers view the JFM project as a merely wage employment activity rather than their own project. Moreover, while the main objective of JFM is to protect forests by assigning villagers with the task, neither FPCs have been actively engaged in the activities. Informants from both villages indicated that one reason for not executing forest activities is because the FD had never paid 50 % of shares of fines from offenders who FPCs apprehend to the FD. The lack of forest protection activities by FPCs has led to continuous exploitation of forest resources by both own and outside villagers even after the initiation of the JFM program. Moreover, the constant population increase in the area along with increased demands for forest resource has added more pressure on remaining forests. As a result, benefits which FPC gained from JFM in the Khammam study area are limited to the reduction of bribe amounts to the FD because of the formalization of their access to forest resources and a minimal wage from forest improvement activities.

In contrast to the Khammam district study area, while FD officers dominated in several parts of local level processes, both Village C and Village D took their own initiatives in making and implementing their own decisions and rules. Yet, there are significant differences between these two FPCs in the process of implementation of decisions and rules. The case of Village C shows that the effective implementation of their own decisions and rules to protect forests and to regulate internal use of forests enabled the villagers to gain exclusive access to increased forest resources in their territory. They also gained additional revenue from JFM related activities such as permission fees and fines. In the case of Village D, on the other hand, the FPC activities have stopped since 2002 due to the political interference and internal conflicts over the FPC management. The collapse of Village D's FPC also meant no regulations or control applied over use of forests under Village D's FPC territory since 2002. This led to a more or less open access situation where both own and outside villagers started to access to forest resources freely without any limits over collection amounts. As a result, Village D's forests have been under rapid degradation. On the other hand of the possibilities of positive outcomes of JFM in terms of forest regeneration and more gains for villagers included in JFM in the case of village C, such positive outcomes may arise at the expense of other local people such as lower castes and

women. Moreover, due to the scarcity of forest resources, the forest allocation has caused significantly negative consequences over local villagers especially those who were not included in JFM.

Lessons learned from the case study

Results of the case study from the Khammam and Medak districts have demonstrated that the same policies (property rights) under JFM have produced significantly different processes and diverse effects at the local level. In other words, while JFM policies in Andhra Pradesh offer a beneficial arrangement for local villages who participate in JFM, whether and to what extent local villages can reap such benefits depends on various factors in addition to policies. Such factors include:

- Degree of forest resource endowments
- Degree of actual benefits from JFM in comparison with the degree of transaction costs
- Size of villages and education level of FPC members
- Ability of FPCs to exercise power in making and implementation of decisions and rules
- Degree of effectiveness of FPCs' implementation of decisions and rules
- Degree of accountability of the FD towards FPCs
- Degree of supports from grass root NGOs for FPCs

Based on the understanding of the reasons which enable and disable local villagers' access to forest derived benefits under JFM, current main challenges are presented as follows:

- High transaction costs of JFM
- Complex and unclear procedures for sharing benefits for high value timber
- Lack of capacity building support for FPCs with low level of capacities
- Risk of elite capture and marginalization of weaker sections within FPCs
- Low level of accountability of the FD towards FPCs
- Unchanged mind set and reluctance of FD officers to act as a facilitator

- Forest demarcation and allocation methods are not participatory and without measures to mitigate potentially adverse impacts
- Risk of creating dependence on donor funding to carry out JFM activities
- Lack of capacity of some grass root NGOs to support FPCs

Policy recommendations

Based on lessons learned from the case study, this report makes the following policy recommendations for policy practitioners in order to ensure further benefits as well as equitable distribution of benefits derived from forest related activities under JFM.

Overall policy recommendations

- Carefully assess local characteristics and power and accountability relationships
- Design implementation strategies which fit in local contexts
- Advocate policy changes which mitigate negative effects and enhance positive effects from JFM

Specific policy recommendations

- To maximize benefits for FPCs
 - Minimize transaction costs accruing from JFM by simplifying designs of a micro plan and JFM implementation procedures
 - Maximize benefits for FPCs from JFM
 - Encourage FPC participation and devolve maximum power to FPCs
 - Provide capacity building support for FPCs
 - Ensure accountability and transparency of the FD towards FPCs
 - Enhance the capacity of FD officers as a facilitator
 - Enhance the capacity of grass root NGOs as a mediator between the FD and FPCs

- To promote equitable distribution of benefits among FPC members
 - Promote democratic election of Management Committees (MC) and chairperson of FPCs
 - Promote democratic participation of general members
 - Promote accountability of chairpersons and MC to general members
- To minimize negative consequences of the establishment of JFM villages over neighboring villagers
 - Conduct prior assessment of potential impacts of the boundary demarcation
 - Promote participation of local villagers in the boundary making processes
 - Prepare additional measures to solve conflicts related to the boundary making

要 約

研究背景

1980年代後半ごろまでインドの国家森林政策は、森林資源から得られる経済的利益を最大化することを目的とし、政府主導型の森林管理制度を実施してきた。この制度下では、政府が森林資源に関するすべての所有権と決定権を保持し、地域住民による森林の伐採や使用は違法行為とみなされていたが、近年、この政府主導型の森林管理制度は様々な理由で見直しを迫られるようになってきている。

その理由の一つとして、まず、地域住民の参加なしに、政府主導で広大に広がる森林資源の管理をすることは資金的にも技術的にも困難であり、効果的ではないことが明らかになってきたことが挙げられる。一方で、森林使用をめぐる地域住民と森林局との間で頻繁に衝突が起り、また、チャンパー（1983）やセレナ（1985）などの国内外の多くの学者や非政府組織（Non-Governmental Organization: NGO）が「政府主導型の政策は資源を糧に生活している貧しいコミュニティの森林使用権利を認めず、彼らの生活を脅かすものだ」と非難し、地域住民の積極的参加と権利を認める必要性を強く主張してきたことも理由の一つとして挙げられる。さらに考えられる理由として、地域住民の参加を促す森林管理制度が、森林資源に依存している貧しい人々の生活を向上させるだけでなく、貧困削減に寄与する重要なアプローチとして近年注目を集めるようになってきていることも挙げられる。

こうしたことから、インド政府は1988年にこれまでの国家森林政策を改め、新しい国家森林政策を策定した。この新政策は、国家の収益を第一に考える従来の政策とは大きく異なり、森林資源の保全を図るとともに森林資源に依存する地域住民のニーズを実現することを新たな最優先事項として挙げている。共同森林管理（Joint Forest Management: JFM）は、森林の保全と地域住民の資源利用の両立を図り、森林局と地域住民で構成される森林保全組合とのパートナーシップを通じて、森林保全を実現することを主な目的としている。

インドでは、貧困ライン下に属するおよそ3億人のうち、2億人が森林資源を重要な生活の糧にして生活していると言われており、JFMは、森林保全だけでなく、住民の権利を認める政策として、貧困削減の手段としても期待されている。実際に、JFM制度発足後、世界銀行、日本の国際協力銀行などの資金、技術協力もあり、森林保全組合の数は急速な拡大を見せている。新しい制度が導入されてから18年目を迎えるが、世界銀行の2006年の統計によると、インドのおよそ27%の森林が85,000の森林保全組合の管理下にある。

しかし、一方で、近年、「JFMには多くの問題が残されている」という多くの批判が、学者やNGOから上がっていることも留意すべき点であり、それらの主な批判は、以下の3つに集約される。

- JFM下において保全組合は十分に利益を受けていないのではないか？
- JFMは、保全組合内での不平等な資源配分をもたらしているのではないか？
- JFMによる森林保全組合への森林領域の割当ては、森林被覆率の低い地域では、森林資源への権利を得られなかった森林利用者に不利益をもたらし、争いの種を作っているのではないか？

研究目的

こうした批判を参考に、本研究では、インドのアンドラプラデッシュ州のカマン地方にある2村（Village AとVillage B）とメダック地方にある4村（Village C、Village D、Village E、Village F）

を対象として、JFMにより地域住民へ利益が適切に配分されているかどうか、配分されていなければ何故なのか、事例分析に基づいて検証する。カマン地方の村は、森林被覆率が高く、規模の小さい、1カースト階級から構成され、メダック地方の村は、森林被覆率が低く、規模の大きい、4カースト階級から構成されている。メダック地方の事例分析においては、主にVillage CとVillage Dを対象にして分析を行うが、近隣の村への影響を説明する際に、Village EとVillage Fの事例も紹介する。

主な研究結果

カマン地方の事例とメダック地方の事例を検証した結果、それぞれの地域でのJFM実施過程、及び効果には以下のような相違が見られた。

カマン地方のVillage AとVillage Bのケースでは、森林関連活動に関する、ルール作り、及び意思決定、利潤の分配のすべての過程において、担当森林官が決定権を掌握しており、そのため、住民の積極的参加、主体性はほとんど見られず、住民はむしろ森林保全のための単純労働力として森林保全組合活動に参加している。また、外部侵入者から森林資源を保護することがJFMの主な目的とされているが、この地域では、森林保全組合が違法に森林資源を採取した外部者を捕獲し、森林官に引き渡すケースはほとんどない。その理由の一つとして、Village AとVillage Bの両保全組合は、過去、森林保全組合が森林官に違法者の引き渡しを行った際、政策で定められた罰金のうちの50%を森林保全組合に対して支払うという、正当な支払いを森林官が行わなかったことを挙げている。また、この地域で問題となっている違法伐採は、JFM後も継続しており、さらに、この周辺地域の人口増加と森林資源への需要の増加により、森林資源は減少傾向にある。このため、両森林保全組合がJFM加入後に受ける利益は森林活動から受ける低労働賃金などに限られている。

一方、メダック地方のVillage CとVillage Dのケースでは、森林局が一部のプロセスにおいて決定権を握っているものの、大部分の意思決定、利潤配分過程において森林保全組合が積極的に参加、主体性を持っていた。JFM導入以後、どちらの村も独自に森林保全や資源活用に関するルールを形成し、実施するようになったが、その一方でどのように森林保全組合が機能したかには両村間に大きな違いが見られた。Village Cの場合は、組合代表者の強力なリーダーシップの下で、外部侵入者を排除する森林保全活動を積極的に実施し、さらに村内部の森林資源使用に対しても規制をかけたため、JFM導入当時に比べVillage Cの森林は大きな回復を見せている。また、外部侵入者からの罰金収入により、組合レベルで大きな利潤が発生するようになっている。一方で、Village Dにおいては、政治的実力者が森林保全組合の実権を掌握したため、組合内の相反する政党に属するメンバー同士の衝突が増し、組合が機能しなくなるという事態が生じており、その結果、Village Dでは、保全活動も実施されず、村内部の資源使用にも規制がかけられなくなったため、内部外より森林資源の乱獲が見られるようになっている。その結果、森林資源は大きな減少を見せ、Village Dのメンバーが受ける森林資源から受ける利益は年々減少している。

さらに、森林被覆率が非常に低く、周辺住民の森林資源への競争率が非常に高いメダック地方では、JFM下で森林官が森林領域を設定し、各保全組合への森林領域を割り当てることで、周辺住民は深刻な影響を受けている。例えば、森林領域を割り当てられなかった森林保全組合のないVillage Fでは、近隣の森林領域に罰金なしにアクセスができなくなっており、大きな損害を受けている。

事例分析より得られた知見

この事例研究の結果より、JFMという同じ政策下でも、地域ごとにその意思決定過程や効果には

大きな差異があることが明らかになった。したがってこの結果は、地域住民がJFMによって利益を受けられるかどうかは、政策による権利の所在に加え、以下のような様々な要因によることを示唆している。

- 森林被覆率
- 森林保全組合に参加する村の特徴（村の規模や教育レベルなど）
- JFMから得られる利益の度合い
- 森林局担当官の保全組合に対するアカウントビリティ
- 森林保全組合の運営能力と全メンバーに対するアカウントビリティ
- 草の根レベルのNGOの援助の有無

さらに、JFMの政策上及び実施過程上の現状の課題として以下の点が挙げられる。

- JFM実施過程に生じる多大な手間と費用
- 高価値の森林資源の利益配分プロセスの複雑性
- 教育レベルの低い地域での森林保全組合の運営能力の欠如
- 保全組合内におけるエリート層による利益独占のリスク
- 森林局側の運営の不透明性と保全組合に対する低いアカウントビリティ
- 森林局担当官の保全組合に対する協力度の低さ
- 地域住民のニーズを反映していない森林領域の割当の方法
- 開発援助機関からの資金への依存を助長する可能性
- 草の根レベルのNGOの森林局と保全組合の間の調停役としての能力の有無

政策提言

本研究では、先に挙げた知見を踏まえ、JFMを住民に十分な利益をもたらす政策として定着させるために、主に以下の点について政策提言を行う。

- 政策実施の際は、地域の特徴を十分に分析し、地域性に沿った政策実施戦略を展開すること
- JFMに関わる手間や費用の最小化
 - マイクロプランやJFMに関わる手続きの簡素化
- 保全組合が享受できる利益の最大化
 - 保全組合の参加を促し、保全組合の行使できる決定権の最大化
 - 保全組合の運営能力の向上
 - 森林局の保全組合へのアカウントビリティの強化
 - 森林局のファシリテーターとしての能力の向上
 - NGOのファシリテーターとしての能力の向上
- 保全組合での公平な利益分配の促進
 - 保全組合の代表や委員会メンバーの民主的な選出方法の促進
 - メンバーの意思決定過程における民主的な参加の促進
 - 保全組合委員会メンバーの他のメンバーに対するアカウントビリティの強化
- 森林領域設定による周辺村への悪影響の最小化
 - 森林領域設定の影響についての事前調査の実施
 - 地域住民の参加の上での森林領域設定の実施
 - 森林領域設定によって問題が生じた場合の解決策の立案

1. Introduction

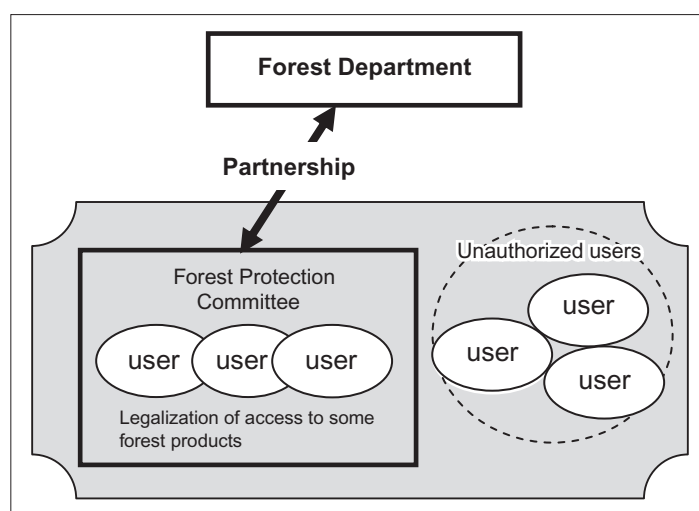
1-1 Background of Joint Forest Management (JFM)

Over the last decades, a prominent trend within the forest sector in developing countries has been to shift from centralized, top down towards forest management to more local based inclusive approaches. This has been the case in India when the well known Joint Forest Management (JFM) was introduced in 1990 in India.

Until late 1980s, national forest policies in India was characterized with a top down approach, which was mainly led by the state's interest to maximize commercial revenue from forests, which prohibited local villagers' access to forests⁵. During the last decades, however, the top down approach has been increasingly questioned in the Indian contexts. The rapid degradation of forests made visible practical failures of the state in managing forest resources which are dispersed in vast areas. Frequent conflicts arose between the Forest Department (FD) and those who are dependent on forests over use of forests. At the same time, both national and international criticisms intensified by Non-Governmental Organizations (NGOs) and donor agencies against the top down approach due to its failure to conserve forests as well as due to its neglect of the needs of the rural poor. Such criticisms were further strengthened because of the recent awareness of the vital role that forest resources play in supporting the livelihoods of the poor people within and around forests and utilize forests for both subsistence and income⁶. According to Khare et al. (2000), among the 300 million estimated to live below the poverty line in India, 200 million people are dependent on forest resources for their livelihood.

In response to these problems, in 1988, the new national forest policy was redefined in a way that displays a drastic shift in terms of policy objectives. In the new policy, a focus on forest conservation replaced maximization of revenue from forests as the main objective. The new policy also showed the official

Figure 1-1 Institutional arrangement of JFM



Source: Author's figure

⁵ Poffenberger (2000), Agrawal (2005)

⁶ Byron and Arnold (1999), Angelsen and Wunder (2003), Scherr et al. (2004)

recognition of the importance of meeting the livelihood needs of the forest dependent population for fuelwood, fodder, minor forest produce, and small timber. Following the new agenda, the Ministry of the Environment and Forests issued a guideline to all states in 1990 to adopt JFM.

The objective of JFM was to achieve better forest resources conservation by creating partnerships between FD and Forest Protection Committee (FPC)s⁷. The introduction of JFM led to changes at the local level since local villagers, who used to be defined as illegal forest users were integrated as actors in a formal, regulatory forest governance system⁸. The role of local villagers changed to co-manager of forests while the role of FD officers changed from a policing authority to a facilitator. FPC members are assigned responsibilities to protect forests and to engage in forest improvement activities such as soil moisture conservation, scientific forest management and plantation. In return, villagers who participate in the FPC gain rights to some forest resources within the FPC forests for domestic use and sale.

The formal recognition of local villagers as co-managers of forests and the active recognition of their rights to forest products seem attractive arrangement for local communities. Since its inception, the number of JFM FPCs has shown an exponential growth: as of 2006, 27 % of Indian forests (17.3 million ha of forest land) are reserved for 85,000 JFM FPCs⁹. Many donor agencies such as the Japanese Bank for International Cooperation and World Bank have provided financial support to JFM initiatives as a means to conserve forests as well as to improve the livelihood of the forest dependent.

In spite of the proliferation of JFM FPCs across India, however, the JFM initiative has been the subject of growing criticisms and concerns of many scholars and NGOs as follows.

The first criticism relates to **the limited benefits which FPCs receive from JFM**. Several researchers have argued that in spite of the discourse of partnership, actual sharing of power towards FPCs is very limited. In turn, this limits benefits that FPCs gain from JFM¹⁰.

The second criticism relates to the question of **inequitable distribution of the benefits among the FPC members**. In spite of a prevailing image of local village as small, homogenous, harmonious units, actual communities are often highly heterogeneous. Villagers differ in terms of castes, gender, occupational backgrounds, and norms and villages are often characterized by hierarchical or asymmetric relationship¹¹. This means that the JFM initiatives may produce different consequences over FPC members. In particular, concern has been raised over the issue of “elite capture” which refers to situations where members of elite groups dominate decision making processes, and use their position to improve access to benefits from forest related activities at the cost of those who are already socially disadvantaged such as the poor and women¹².

⁷ Khare et al. (2000)

⁸ Agrawal (2005)

⁹ World Bank (2006)

¹⁰ Khare et al. (2000), Poffenberger (2000), Sunder (2000), Hildyard et al. (2001), Sarin et al. (2003)

¹¹ Agrawal and Gibson (1999), Campbell et al. (2001)

¹² Agarwal (2001), Kumar (2002)

The last criticism relates to **potential adverse impacts of JFM on inter village benefit distribution**. One of the central strategies of the JFM approach is to assign local villagers to protect forests against others for example, neighboring villagers. As a consequence, those villagers included in the JFM program may gain access to resources at the expense of neighboring villagers, now seen as unauthorized users¹³.

Such criticisms indicate potential pitfalls as well as possible detrimental effects of JFM. Yet it is not clear whether JFM generates similar effects across different localities and villages. Nor has much empirical research been conducted to investigate specific social and political causes for the positive or adverse effects of JFM implementation. Agrawal and Gibson (1999) attended to the difference in characteristics of local units such as forest endowments, size, as well as local decision making processes as important factors which may bring out different effects in terms of forest conservation. A similar argument may apply in impacts on forest derived benefits: differences in the characteristics and socio-cultural relationships of villages and other actors affect processes and outcomes of the JFM implementation. And if that is the case, it would be important to attend to such difference in order to understand main reasons for certain outcomes.

1-2 Objectives

Drawing on the empirical study of JFM project in Andhra Pradesh State of India, this report aims to investigate how JFM implementation affects abilities of variable local actors to benefit from forest related activities and to identify the reasons which enable or disable such abilities of local actors. The report selected two study areas for a case study: Khammam district and the Medak district from Andhra Pradesh, which differ in terms of the degree of forest abundance, size of villages, and caste composition. The case study will be guided by the following three research questions.

- 1) To what extent do FPCs gain from JFM?
- 2) How are benefits from JFM distributed among FPC members?
- 3) How does the establishment of JFM villages impact accesses of neighboring villagers access to forest derived benefits?

Based on the empirical results, the report makes recommendations towards policy practitioners to further improve both structures and implementation of JFM. Policy practitioners may include international donors which provide funding for JFM, the Ministry of Environment and Forests, the Forest Department, grass root and state level NGOs primarily working with JFM villages and FPC members.

1-3 Analytical framework

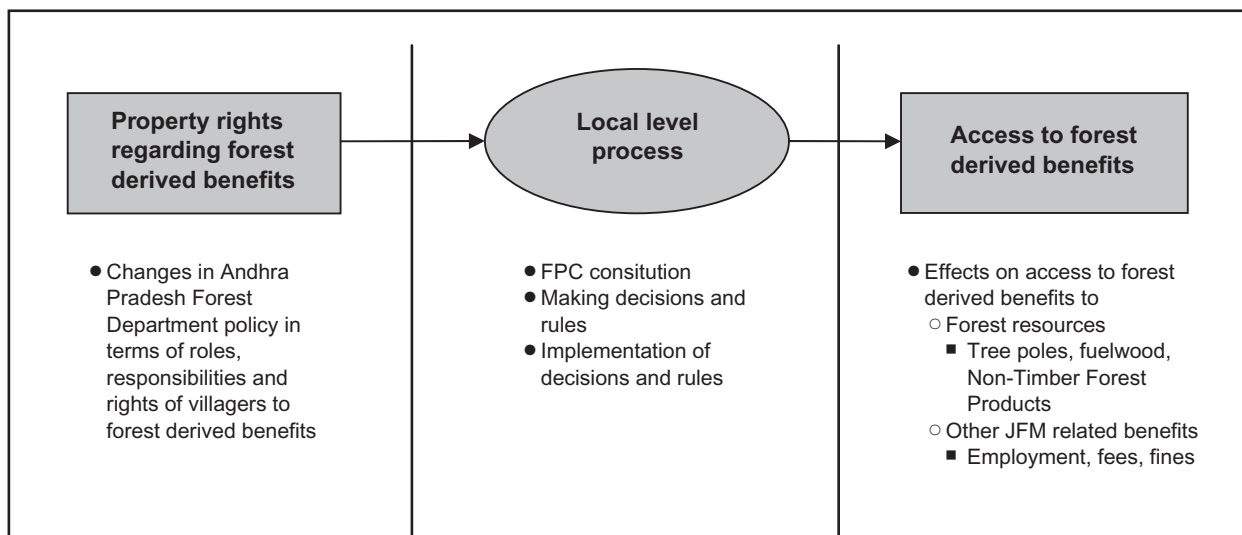
In order to analyze changes in actors' ability to benefit from forest related activities before and after JFM,

¹³ Sunder (2001), Carter and Gronow (2005), Sikor and Thanh (2007)

the report applies the concept of “access” as defined by Ribot and Peluso (2003). These authors define access as the ability to derive benefits from things while they view property as the right to benefits. Whereas property lays out rules for how local actors may obtain and make use of benefits from particular resources and activities; access has to do with actual usage of rules in practice through local processes and power relationships. By considering not only rights but also access, it becomes possible to understand not only actual effects of JFM on the ability of local actors to benefit from forest related activities but also how these effects came about, that is, reasons, which influence such abilities of local actors.

Inspired by their theoretical view, this report begins with the analysis of changes in the Government Order in Andhra Pradesh State of India regarding rights of local actors to forest derived benefits under JFM as shown in Figure 1-2. Following guidelines issued by the Ministry of the Environment and Forests, the forest department in each state specifies responsibilities of FPCs and the structure for sharing of benefits from forest related activities between the FD and FPCs. Such benefit sharing arrangements for forest resources may vary from state to state. Forest derived benefits may include benefits directly obtained from forest resources such as fuelwood, tree poles and key Non-Timber Forest Products (NTFPs) as well as other benefits which accrue from forest related activities such as share of timber sale profits, wage employment opportunities, fines and user fees.

Figure 1-2 Analytical framework



Source: Author’s figure

Then, the report turns its gaze on the local level processes and power relationships which Ribot and Peluso (2003) argue as key factors, aside from rights, which influence actual abilities of local actors to benefit from JFM. In general, JFM facilitates the following three processes at the village level.

1) Constitution of FPCs: This process involves demarcation of forest boundary, grouping of villagers to constitute FPCs and selection of Management Committee (MC) and a chairperson.

2) Making decisions and rules for governing FPC forests: Once a FPC is constituted, each FPC has to

make decisions and rules for how to govern the assigned forests. A micro plan acts as a planning tool for each FPC.

3) Implementation and enforcing of the above decisions and rules: According to the above decisions, FPCs implement the FPC works in collaboration with the FD officers. The facilitation of FPCs also involves meetings to prepare and review implementation progress of the micro-plan, recording of minutes and management of accounts accruing from JFM related activities.

In analyzing local level processes and power relationship, Agrawal and Gibson (1999) and Agrawal and Ribot (1999) offer useful theoretical frameworks for understanding reasons which may affect accesses of local actors to forest derived benefits. According to Agrawal and Ribot (1999), the effects of devolution as exemplified by JFM depend on “what kinds of powers” are devolved to “whom” in the local level processes as well as accountability relationships of involved actors. Following their argument, the report analyzes the FPC constitution processes by which certain villagers are officially included in JFM policy implementation as the local level institutions as FPCs, that is, the way forests are demarcated and divided to FPCs. The report also analyzes “characteristics of FPCs” identified by JFM, which Agrawal and Gibson (1999) claim as one of main factors which affect local level process. They emphasized the need to attend to the difference in characteristics of local units such as forest endowments and size and composition of villages to understand local decision making processes as well as resulting outcome. Agrawal and Ribot (1999) argue further that the effects of devolution are related to the extent to which the local units, FPC in the case of JFM, can exercise power in relation to other actors. They classify “power” into three domains: legislative (creation of rules), executive (making, implementing and enforcing of decisions) and judicial (adjudication of disputes). The JFM approach claims devolution of “executive” power to the FPCs while the “legislative” and “adjudication” powers remain in the hands of the state. The report therefore attends to the extent to which FPC can exercise executive power in the process of institutional recognition, and making and implementation of decisions and rules vis á vis the FD. Furthermore, Agrawal and Ribot (1999) argue that an accountability relationship of involved actors is a key component to affect the outcome. Hence, the report analyzes two levels of accountability relationship: the degree of accountability of FD officers towards FPCs as well as FPCs towards their general members.

Finally, the report investigates effects over accesses of local villagers to forest derived benefits as a result of changes in property rights and local level processes and power relationship. In the present study, the main villagers include FPCs, individual members of the FPCs and other local forest users such as neighboring villagers and illegal loggers if relevant.

Based on the above analytical framework, the report conducts a case analysis in two study areas: Khammam and Medak districts in Andhra Pradesh State of India. The following part of the report consist of four sections. The first section describes backgrounds of case study areas and explains methods of the case study analysis. The second section introduces the case study. The case study section will analyze 1) forest policy structures before JFM, 2) changes in government policies related to rights of local actors to forest derived benefits after JFM, 3) the case analysis of local level processes and effects over local villagers’ access to forest derived benefits in the Khammam and Medak study areas, and 4) summary of case study analyses. The

third section summarizes over lessons learned from the case study. The fourth section concludes with policy recommendations based on the lessons learned.

1-4 Background of the case study area

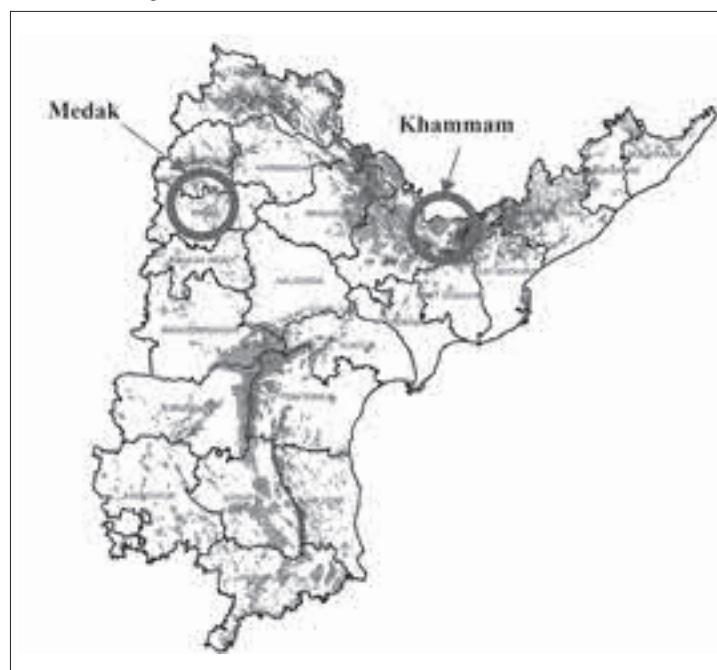
1-4-1 Andhra Pradesh

The study area, the Andhra Pradesh (AP) state, is the fifth largest state which has a population of 76.2 million (Census 2001). It has 6.4 million hectares of forestland, which constitutes 23 % of the state's geographical area and 8.24 % of the total Indian forest area (Andhra Pradesh Forest Department 2006). Since 1992, the Andhra Pradesh Forest Department have implemented the JFM program, which has also been financially supported with the World Bank funding for JFM Project from 1994 to 2000 (USD 77.4 million) and Community Forestry Management Project from 2002 onwards (USD 108 million). The number of FPCs in Andhra Pradesh amounts to 8,343 in total as of May, 2006 (Andhra Pradesh Forest Department 2006). About 1.5 million ha of forests (25 % of total forests in AP) is managed by the FPCs under JFM (*Ibid.*).

1-4-2 Khammam and Medak districts

Within the AP state, the author purposefully selected the Khammam district and the Medak district, which differ in terms of degree of forest abundance, size of villages, and caste composition. The selection was based on the assumption that such differences may have different impacts on accesses of concerned local actors to benefits from forest related activities.

Figure 1-3 Locations of study areas in the Khammam and Medak districts in Andhra Pradesh



Source: Andhra Pradesh Forest Department (2005)

Table 1-1 Characteristics of selected villages for a case study

District	Khammam		Medak			
Name of village	Village A	Village B	Village C	Village D	Village E	Village F
Year of establishment	1998	1998	1997	1998	1998	No allocation
Allotted forest lands (ha)	500	225	574	372	900	0
Number of households	38	41	325	344	382	197
Forest ha per household (ha)	13.2	5.5	1.8	1.1	2.4	0
Other Caste			10%	4%	14%	12%
Backward Caste			37%	39%	49%	56%
Scheduled Caste			17%	14%	28%	14%
Scheduled Tribe	100 % (Koya)	100 % (Koya)	36% (Lambada)	43% (Lambada)	8%	19%

Source: Andhra Pradesh Forest Department

The Khammam district is a forest dense area: forest areas consist of 52.6 % of the total geographical area. The district is also known for a high population density of Scheduled Tribes, called the Koya tribe. Koya tribes have lived in smaller sized villages located within and adjacent to forest areas for over decades. On the other hand, the Medak district is a forest scare area: forest areas consist of only 9.4 % of the total geographical area. The area is littered with larger sized villages inhabited by people of mixed composition of caste groups.

1-4-3 Case study villages

For the purpose of the case study, two villages (Village A and Village B) from the Khammam district, and four villages (Village C, Village D, Village E and Village F) from the Medak district were selected (see Table 1-1). In the case of the Medak district, the report focuses mainly on Village C and Village D as case examples. However, the report also draws examples from Village E and Village F to highlight impacts of JFM on accesses of neighboring villagers to forest derived benefits.

Village A and Village B in the Khammam district are relatively small with 38 and 41 households, respectively, homogenous with only one caste group (the Koya tribe) and endowed with larger forest areas per household with 13.2 ha and 5.5 ha of forests per household respectively. The villages are located in a tribal belt within forest dense area, where the Koya tribe is a dominant population. The education level in the area is low with only handful adults who are literate in villages. This area has been also susceptible to high incidents of illegal logging, as there are many high valued timbers such as teak and rosewood.

In contrast, Village C, Village D, Village E and Village F in the Medak district are relatively large from 197 to 382 households, heterogeneous in terms of caste composition. The villages are located within scattered forests and endowed with small forest areas. Forest areas per household are much smaller compared to the Khammam study area ranging from 0 ha to 2.4 ha. The selected villages are consisted of four caste groups,

namely, the Other Caste (OC), Backward Caste (BC), Scheduled Caste (SC), and Scheduled Tribe (ST). They are commonly used categories in the rural parts of AP state. Among these castes, OCs are the highest ranked category followed by BCs. In the study areas of the Medak district, most people belonging to OCs are large sized land-owners who hire the landless from BC and SC as wage laborers to work on their lands. BC may be the second highest ranked class, most of who are small to medium sized land holders. They engage in different kinds of activities such as agriculture, fishery, livestock, wage labor and business. There are also higher percentages of the educated who can read and write among OCs and BCs. In this hierarchy, SCs and STs are viewed as socially disadvantaged groups. Among SC people, there is a high proportion of the landless who work as a wage labor. SCs have been subject to much social discrimination even while their official category of “untouchable” was abolished. SC has long engaged in what are considered socially undesirable jobs, such as performing funeral services for humans as well as animals. Most of STs own small sized lands adjacent to forests and are quite distinct from the other caste groups in terms of language and cultural practices. The somewhat segregated status of the STs is also seen in that most villages consists of a center inhabited by OCs, BCs, and SCs members whereas STs inhabit small surrounding hamlets adjacent to forests.

1-4-4 Livelihood activities of the case study villages

In the both case study areas, main livelihood activities include agriculture, livestock, forest related activities, and wage labor. Among these agriculture is the most important source of income. Yet, since agriculture in this region is mostly rain-fed, and subject to the vagaries of changing weather, livestock and forest related activities also play an important role in supplementing income and providing an economical safety net in times of drought. Thus, people in the area have long depended on forest resources for both subsistence and income. Fuelwood is used for everyday cooking and sale and women collect fuelwood regularly either by head loading or using a cart. Tree poles are used to make implements to cultivate agriculture fields and to construct houses as well as buildings used for village activities such as festivals and marriages. NTFPs such as adda and beedi leaves are collected for household use and sale. Trees and fodder are also important dietary sources of small ruminants such as sheep and goats. As should be clear from this list, materials from forests are used for multiple purposes on a daily basis and this is the case for all caste groups. Yet, the dependency on forest resources such as fuelwood and NTFPs are higher among the lower castes and the landless, and the forest is accessed more frequently by the women of these groups, whose work it is to collect such resources.

1-5 Methods

The field research was conducted for a total of four months four times during the period between May, 2005 and January, 2008. The first phase field work concentrated on qualitative methods. With the assistance of three local translators and research assistants, the author conducted semi structured individual and group interviews with around 100 villagers from the Khammam and Medak districts to gain in-depth understanding of their perspectives on local level implementation process and effects on their access to forest derived benefits (see the attachment 1: list of informants and the attachment 2: semi structured interviews). Informants included general members of FPCs, chairpersons, Management Committee members as well as a village political representative, making sure to include those with different socio economic background such as caste groups,

main livelihood occupation (e.g. agriculturist, NTFP collectors, livestock holders, and wage labor) and gender (male and female).

To further supplement the results of qualitative data, questionnaire surveys were conducted with 561 villagers with a help of eight enumerators and two local translators (see the attachment 3: questionnaire surveys). Table 1-2 shows the number of households, female and male members selected for the surveys for each village. The main purpose of the questionnaire survey was to obtain detailed information regarding their perception of availability of forest resources, and JFM related benefits as well as their participation in different processes of JFM implementation.

In the case of the Khammam study area, the author conducted random sampling and selected two members (female and male) from each household. As for villages in the Medak district, the author randomly selected households from stratified sample according caste groups and conducted a survey with two members from the selected household for Village C and Village D. While conducting the survey, the author detected seriously negative impacts of JFM over neighboring villages such as Village E and Village F. The author thus conducted additional simplified version of questionnaire surveys with randomly selected households in these two villages to assess their perception of effects of JFM over their forest derived benefits.

Table 1-2 shows the number of informants selected for questionnaire surveys in selected villages. Table 1-3 and Table 1-4 present basic demographic characteristics of the selected informants in terms of size of land holding in the Khammam and Medak study areas respectively.

Table 1-2 Number of informants selected for questionnaire surveys

District	Khammam		Medak			
Number	Village A	Village B	Village C	Village D	Village E	Village F
Total households	38	41	325	344	382	192
Household surveyed	23	24	114	70	50	55
Female surveyed	23	24	112	70	—	—
Male surveyed	23	24	114	66	—	—
Total number surveyed	46	48	226	136	50	55

Source: Survey conducted by the author

Table 1-3 Basic demographic characteristics of sampled informants in the Khammam district

Name of village	Number of surveyed households	% of size of land holding (ha)			% of educated (more than one year of education)		
		0-2	2-4	≥4	Female	Male	Total
Village A	23	9	48	44	4	9	7
Village B	24	29	71	0	8	30	19

Source: Survey conducted by the author

Table 1-4 Basic demographic characteristics of sampled informants in the Medak district

Name of village	Number of surveyed households		% of size of land holding (ha)			% of educated (more than one year of education)		
	Caste	Number	0-0.2	0.2-1	≥1	Female	Male	Total
Village C	OC	14	—	30	71	58	86	73
	BC	41	26	55	19	12	32	22
	SC	21	71	24	5	10	48	29
	ST	38	21	55	24	—	4	12
	Total	114	30	46	24	12	39	26
Village D	OC	5	20	20	60	60	40	50
	BC	25	36	44	20	12	39	25
	SC	10	60	40			22	11
	ST	30	20	53	27	3	25	14
	Total	70	31	46	23	10	31	20

Source: Survey conducted by the author

2. Case study

2-1 Rights and access patterns of local actors to forest derived benefits before JFM

As shown in Table 2-1, prior to the introduction of JFM, the relationship between the FD officials and local villagers used to be a more of the one between those regulate and those subject to regulations and control. Under previous policies, local villagers were often identified by the FD as illegal encroachers or offenders to forests since they had no official rights or roles to use or manage forest resources. The FD officers used to exercise policing power over locals who illegally collect fuelwood, tree poles and other valuable forest resources. Those villagers who were caught in the collection of forest resources had to pay fines to the FD.

In spite of the presence of such regulations, informants from villages from both the Khammam and Medak districts told that they had *de facto* access to forest resources, entering forests by carefully avoiding the timings and places of FD officer's patrols. Yet, FD officers were well aware of the fact. Many field level FD officers therefore forced households to pay bribes according to the quantity of forest resources collected with threats of reporting their illegal conduct.

Table 2-1 Roles, responsibilities, and property rights related to forests before JFM

		Forest Department	Villagers and others
Roles		· Regulators of intruders to forests (with a policing authority) · Manager of forests with a primary focus on plantation	No
Responsibilities		· Protection and management of forests	No
Rights	Forest resources	· Exclusive rights to forest lands and resources	No
	Revenue from forest related activities	· Exclusive rights to revenues generated from forest lands under their jurisdiction	No

Source: Author's figure based on policy documents and interviews

2-2 Changes in rights to forest derived benefits in Andhra Pradesh after JFM

Notably, the introduction of the JFM approach has brought about drastic changes in roles, responsibilities and property rights of the FD and local villagers who are included FPCs as shown in Table 2-2. The role of local villagers, who are integrated into FPCs, changed to co-manager of forests with the FD officers as a collaborator. Another important aspect is the official acknowledgement of the roles of NGOs as a mediator between the FD and FPCs. In particular, grass root NGOs in project areas are viewed as important actors in supporting the FPC formation processes as well as implementation of JFM activities.

According to the latest Government Order (2004) in AP, which specify the JFM implementation structures, all the households who belong to FPCs gain usufruct rights of forest resources such as fuelwood and NTFP and 100 % of the incremental volume of timber and bamboo harvested from the FPCs' forest. In addition, FPC members are entitled to receive wages from forest improvement works, and to receive 50 % of fines if they

hand over forest offenders to the FD. In return, FPC members are assigned a primary responsibility to protect forests against encroachment, grazing, fires and thefts of forest produce, and to engage in forest improvement activities such as soil moisture conservation, scientific forest management and plantation. Moreover, once a village constitutes a FPC, the FPC has to select MC and chairperson of FPC. Every FPC is to prepare a micro plan to design forest protection and treatment works in collaboration with FD officers. A micro plan is mainly concerned with making decisions for kinds of forest improvement works to be conducted (e.g. soil moisture conservation, check dam construction, and kinds of tree species for plantation areas) for each FPC forest area. In addition to the micro plan, the FPC management involves the facilitation of meetings, recording of minutes of meetings, and management of revenue in FPC accounts such as wages received from the FD for forest improvements works.

Table 2-2 Roles, responsibilities, property rights in the case of Andhra Pradesh state under JFM (based on Government Order 2004)

		Forest Department	Forest Protection Committees (FPCs)	Others
Roles		<ul style="list-style-type: none"> · Co-manager · Facilitator for the FPC 	<ul style="list-style-type: none"> · Co-manager of forests 	No
Responsibilities		<ul style="list-style-type: none"> · Forest protection · Forest improvement 	<ul style="list-style-type: none"> · Forest protection · Forest improvement · FPC facilitation 	No
Property rights	Forest resources	<ul style="list-style-type: none"> · Forest lands 	<ul style="list-style-type: none"> · Usufruct rights of NTFPs, fuelwood etc. · Rights to sell some products to an open market · Rights to incremental volume of timber in their territories 	No
	Revenue from forest related activities	<ul style="list-style-type: none"> · 50 % of fines 	<ul style="list-style-type: none"> · 50 % of fines collected from forest offenders · Wages from forest improvement 	No

Source: Andhra Pradesh Government Order (2004)

In spite of various responsibilities assigned to FPCs, the above policy shift towards more rights to forest derived benefits for local villagers seems a quite beneficial arrangement for villagers who join the JFM program. Under JFM, villagers who become members of FPC gain formalized rights for various forest resources: that means that they do not have to hide from the FD to smuggle into forests or to pay bribes to the FD officers any longer. Moreover, FPC members are also assured for additional revenues related to JFM activities such as 50 % of fines collected from forest offenders if they apprehend them to the FD and wages if they participate in forest improvement works.

Yet, it is of question whether and to what extent various villagers who are part of JFM can gain benefits presumed by present policies; or what effects the establishment of JFM villages may have on neighboring villagers who are not part of JFM. In the following sections, the report investigates these questions through analyzing local level implementation process and power relationships of local actors and the consequent effects on accesses of local actors to forest derived benefits in Khammam and Medak districts.

2-3 Case study 1: Village A and Village B in the Khammam district

Village A and Village B in the Khammam district are relatively small with around 40 households. All households belong to Koya tribe who has been highly dependent on forest resources for their subsistence use and sale. The Khammam study area is endowed with rich forests with numerous high valued timber such as teak and rosewood. This area is also known for high incidences of organized illegal logging activities.

Considering the prevalent illegal logging practice in the Khammam study area, the introduction of JFM in the area has the potential to bring about two positive outcomes: 1) to achieve better protection through assigning villages with responsibilities to protect forests from others especially, timber smugglers; and 2) to bring more benefits to villages through the formalization of their usufruct rights of forests and provision of additional benefits through wage employment and share of fines collected from forest offenders. In the following sections, the report investigates if such potentials are realized by analyzing the local level processes and effects on forest condition and villagers access to benefits.

2-3-1 Constitution of Forest Protection Committees

After the World Bank JFM project was initiated, the FD identified and divided the forest that would be governed under the JFM program. FD officers also looked for villages to take on the responsibility. In general, they viewed the villages lying closest to the demarcated forest as most suited for enrollment.

In 1998, a FD officer and a grass root level NGO personnel visited Village A and Village B to persuade them into constituting FPCs. They explained about the structure and benefits of the JFM program to the villagers. In addition, the FD officer also made a promise to provide both villagers with employment opportunities and additional materials for village development if they constitute FPC. Both villages agreed to constitute FPCs and were allotted with 500 ha and 250 ha of forests for their management respectively. A chairperson and MC members were selected informally among the educated.

The above process shows that the FPC constitution was mainly driven by FD officers. FD officers demarcated forests without the involvement of villagers, identified villages based on proximity to forests for forest allocation and persuaded those villages into constituting FPCs.

Another important aspect to note is villagers' motivation to participate in JFM. Table 2-3 shows respondents assessment of main two reasons for participating in the JFM program. Two respondents (female and male) were selected from 23 and 24 households respectively from Village A and Village B. The highest ranked main reasons for their participation in JFM are as follows:

- Increased access to forest resources

- Wage employment opportunities

- Regenerate forests for the future generation
- FD promised to provide materials for village development and wage employment opportunity for forest improvement activities

Results show that regenerating forests, which is the main objective of the FD, is not ranked as high as other reasons such as increased access to forest products, and wage employment opportunities (and materials for village development in the case of Village B) . This relatively lower rank assigned for forest regeneration as a main reason for participation in JFM may be due to the forest abundance in the Khammam study area. Villagers may not perceive critical needs to protect forests against others as they have access to sufficient forest resources for their needs.

Table 2-3 Respondents assessment of two main reasons for participation in JFM in Village A and Village B

Reasons for participation in JFM	Village A		Village B	
	1 st Reason	2 nd Reason	1 st Reason	2 nd Reason
Increased access to forest products	40.0%	31.7%	49.0%	31.9%
Wage employment opportunities	24.4%	22.0%	14.3%	44.7%
Regenerate forests for the future generation	11.1%	4.9%	2.0%	0.0%
Forest department promised to provide materials	8.9%	19.5%	34.7%	21.3%
Forced by forest department	6.7%	2.4%	0.0%	0.0%
Social aspect	6.6%	14.6%	0.0%	2.1%
Other reasons	2.2%	4.9%	0.0%	0.0%
Total	100%	100%	100%	100%

Source: Survey conducted by the author

The report analyses further how the FD officer driven processes and villagers’ motivation for FPC participation affected the following processes of making and implementation of decisions and rules.

2-3-2 Making decisions and rules

Similar to the FPC constitution process, FD officers exercised power and dominated in decision making processes. According to AP Government Order (see the section 2-2), it is one of FPCs’ key responsibilities to prepare a micro plan in collaboration with FD officers. Despite the policy recognition of FPCs’ important roles in a micro plan making, FD officers prepared micro plans for both villages with an NGO’s assistance. Only minimal involvement of FPC members was noted. The FD officers did not incorporate FPC members’ needs or opinions in a micro plan. Such neglect of villagers’ opinions is also reflected in one FPC member’s complain, “even though we want to plant some trees or plants in the FPC forest area, we are not allowed to do so.” Moreover, in the course of decision making, no particular decisions or rules were made for how to protect forests from others particularly smugglers of timber or how to regulate members’ use of forest resources.

2-3-3 Implementation of decisions and rules

The domination of FD officers was also observed in the implementation processes of decisions and rules. The process is also characterized with the low level of interest and participation of FPC members in JFM activities.

Following micro plans, FD officers executed forest improvement activities including plantation which took place for one month a year. In general, FD officers call FPC members to participate in the planned activities and pay FPCs wages after the work is completed.

As previously described, the main objective of JFM is to protect forests by assigning villagers with the task. This protection activity by FPC may be especially important to prevent large-scale illegal logging activities, which has been a serious problem in the Khammam study area. However, neither FPCs have been actively engaged in the activities for several reasons. Informants from both villages told that one of reasons for not executing any forest protection activities is because FD officers never paid to FPCs, 50 % of shares of fines from offenders who FPCs apprehend to the FD in spite of their rights to such share according to the Government Order (see the section 2-2). In fact, shortly after the JFM initiation, both FPCs caught illegal loggers in their forests and brought them to the FD for their appropriate sanction. However, neither of FPCs received a share of fines from the FD. Another reason that both villagers explained is a far more damaging one, which almost completely killed FPCs' interest to actively engage in forest protection or other JFM related activities. A group of FPC members in one nearby village in the study area caught illegal loggers and apprehended them to the FD for appropriate sanctions and rewards. Nevertheless, instead of receiving the share of fines as rewards, these FPC members were imprisoned for the violent act, which political powerful figures in aligned with illegal loggers claimed. As a result, forest protection activities by FPCs in neighboring villages have completely stopped.

These two incidents indicate the lack of accountability of the FD towards FPC members, which seem to have formed serious obstacles for building a trustful relationship between the FD and FPCs in "joint" forest management. Moreover, Village B never received materials for village development, which the FD promised to provide at the time of the FPC constitution. The lack of accountability is also observed in the wage payment processes. The FD officers have never informed FPC members about official wage rates for each forest improvement activity. As a result, FPC members receive minimal wage rates, which are significantly lower than officially claimed ones. The lack of accountability with no payment of fines, breaking promises of providing village development materials and unclear wage payment process enhanced distrustful feeling against FD officers.

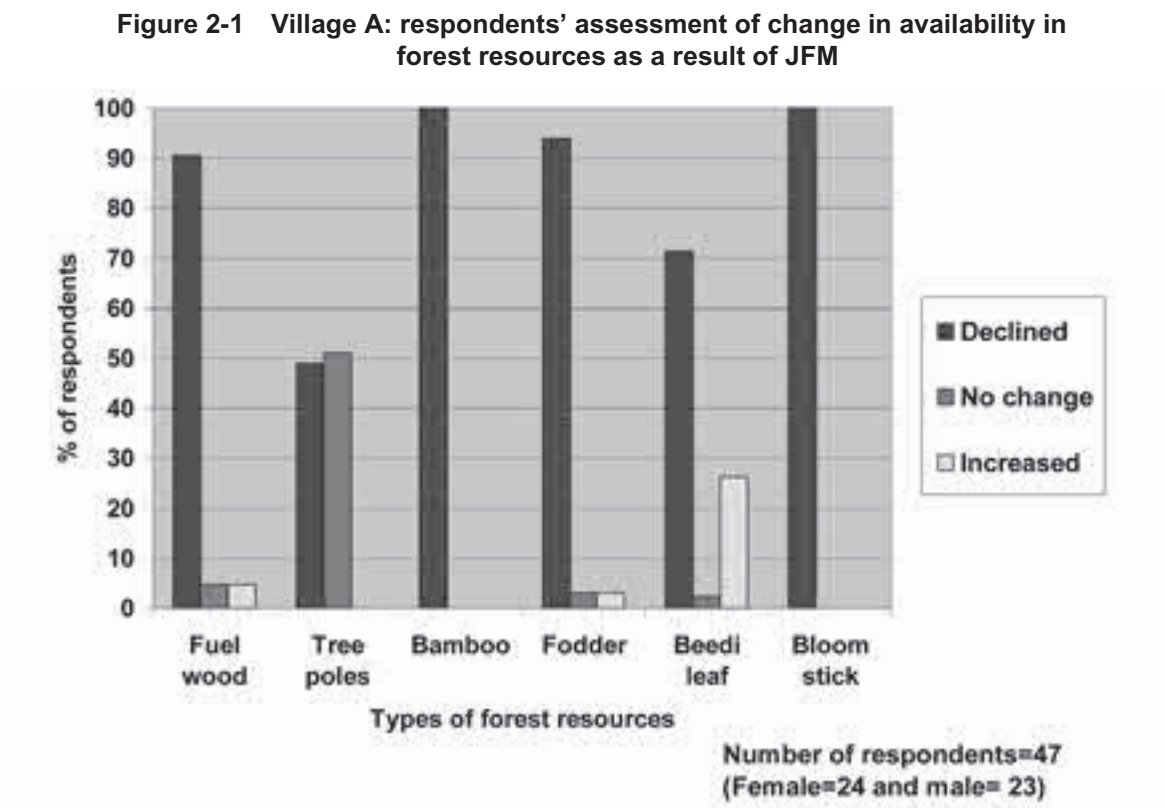
The domination of FD officers was also observed in the facilitation of FPC activities with little participation of FPC members even though FPC members are supposed to take a lead in these processes according to the Government Order (see the section 2-2). The FD officers facilitated meetings to review implementation progress, wrote minutes of the meetings and managed accounts. Meetings were attended by only several key FPC members such as a chairperson and other a few. Informants of general members,

especially women, expressed little interest in participating in the FPC meetings. FD officers also mentioned about the difficulty in gathering sufficient number of people for these meetings.

In summary, the case from the Khammam study area showed that FD officers dominated in almost every process of the JFM implementation. The little involvement of FPCs in JFM activities may attribute to various reasons, among which are the lack of accountability of FD officers towards the FPC members, the reluctance of FD officers to devolve powers to FPCs, too low level of education among FPC members to manage technically complex JFM procedures, and little support from a grass root level NGO, which is assigned to help FPCs. Even while the grass root NGO is well aware of problems of FD's not sufficiently supporting FPCs, they are in a difficult position to openly criticize the act of the forest department, partly because they receive funding from the FD and partly because they would like to maintain a friendly relationship with the FD for future collaboration.

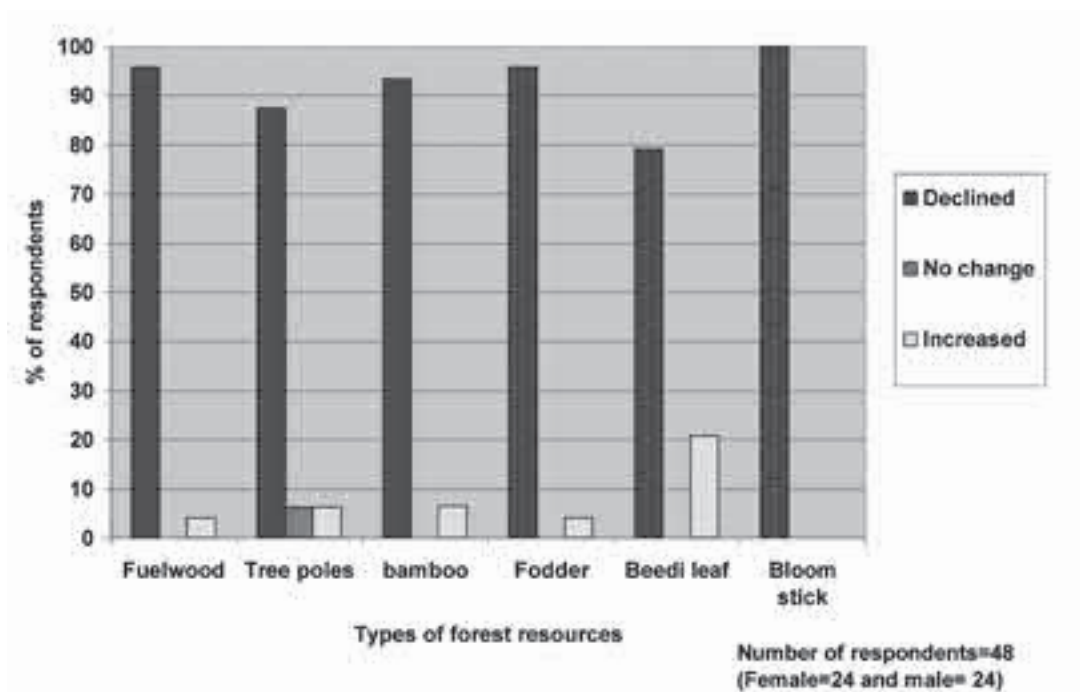
2-3-4 Effects on accesses of local actors to benefits from forest related activities

The case from the Khammam district showed that almost no power had been devolved towards FPCs in the JFM implementation processes. The case also showed that forest protection, which is supposed to be a core activity of FPC, had not been enforced by FPCs due to the lack of the FD's support and accountability towards FPCs. Furthermore, FPCs received only minimal wages for forest improvement works as compared to official rates. This situation limited the degrees to which local villagers who are part of JFM gain from JFM in the Khammam study area as described as follows.



Source: Survey conducted by the author

Figure 2-2 Village B: respondents' assessment of change in availability in forest resources as a result of JFM



Source: Survey conducted by the author

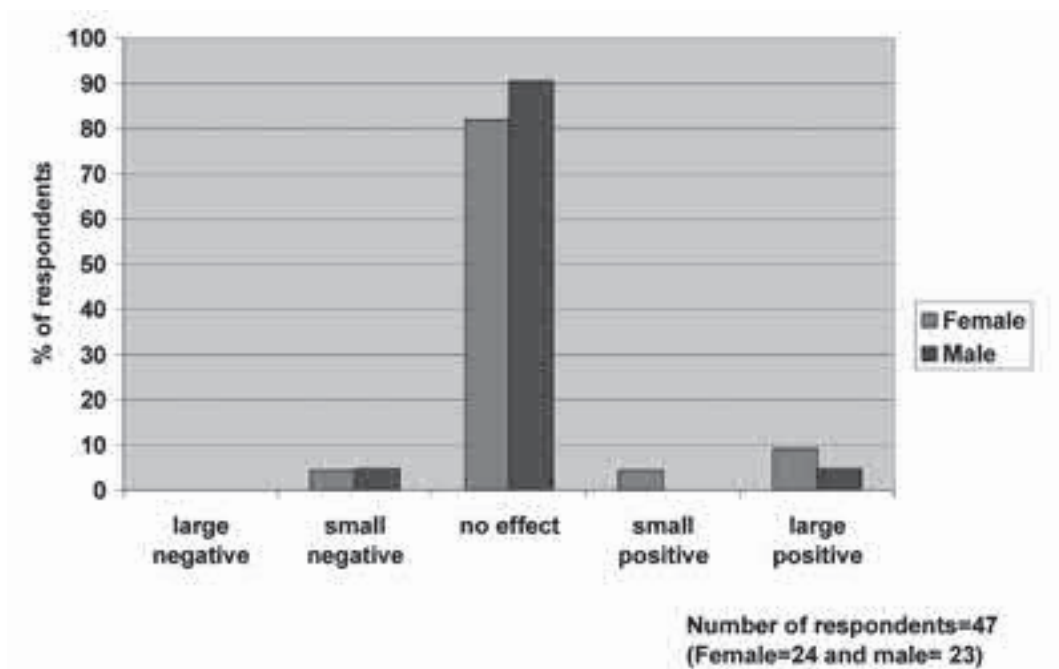
(1) Forest Protection Committees (FPCs)

As for accesses of FPCs to forest derived benefits, according to the Government Order in AP, FPCs are expected to gain increased and exclusive access to forest resources for their subsistence use and benefits accruing from high valued trees. Moreover, they are supposed to gain further from wages from forest improvement activities and share of fines collected from forest offenders, which FPC apprehend to FD officers. Yet, the below observation shows that such gains for FPCs are minimal.

Those who joined a FPC gain from JFM to some degree from the formalization of their access to forest resources for subsistence use. They do not have to pay bribes or fines to the FD officers any longer. On the other hand, the lack of forest protection activities by FPCs has led to continuous exploitation of forest resources by both own and outside villagers even after the initiation of the JFM program. Moreover, the constant population increase in the area along with increased demands for forest resource has added more pressure on remaining forests.

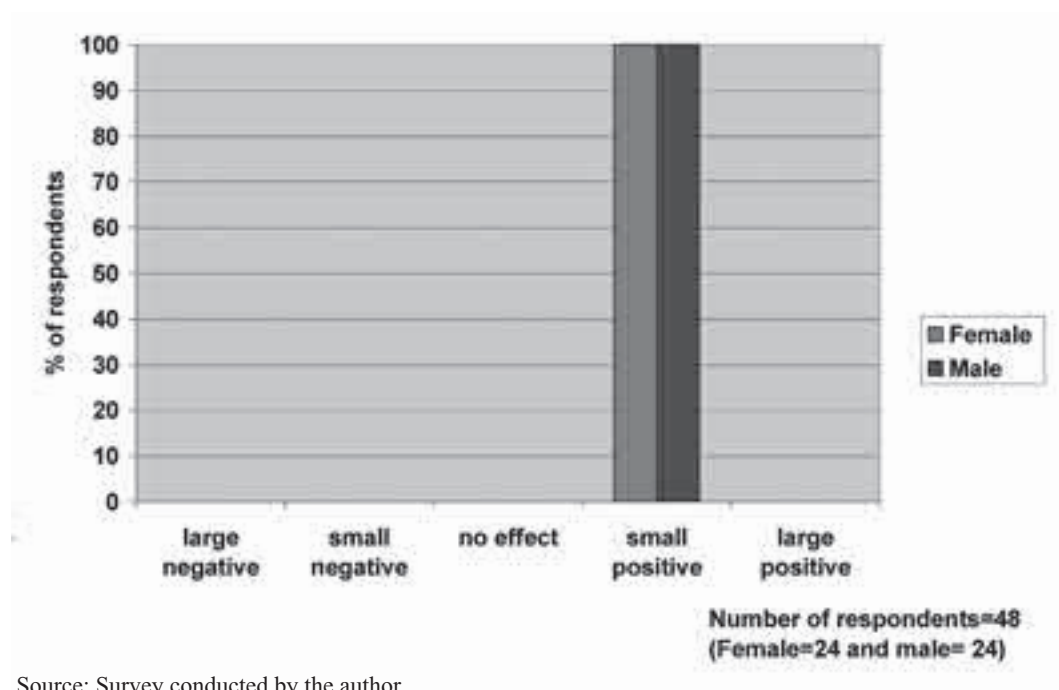
As a consequence, the general trend of declining availability in forest resources is shown in Figure 2-1 and Figure 2-2. 47 and 48 respondents from village A and village B were asked to assess changes in availability (declined, no change or increased) of key forest resources such as fuelwood, tree poles, bamboo, fodder, beedi leaf, and bloom stick as a result of JFM. Results of both villages show that a majority of respondents view a declining trend in availability of most of resources. This indicates that there is no increased availability of forest resources for FPCs to gain from due to the lack of forest protection activities.

Figure 2-3 Village A: respondents' assessment of the magnitude and direction of the change in benefits they derive from forest related activities as a result of JFM



Source: Survey conducted by the author

Figure 2-4 Village B: respondents' assessment of the magnitude and direction of the change in benefits they derive from forest related activities as a result of JFM



Source: Survey conducted by the author

As for FPCs access to additional benefits such as wages and share of fines collected from forest offenders, such benefits are none to minimal due to the lack of accountability of the FD towards FPCs. Moreover, FPCs have not gained any share of benefits from high valued trees since these trees have not reached the maturity. The presence of the lack of accountability of the FD also poses a question for whether future benefits accruing from plantation will be fully transferred to FPCs as promised by the policy.

The above observation has indicated that benefits which FPCs gained from JFM in the Khammam study area are limited to the reduction of bribe amounts to the FD because of the formalization of their access to forests and minimal wage from forest improvement activities.

Results of respondents' assessment of the magnitude and direction of the change in benefits they derive from forest related activities as a result of JFM also indicate that villagers perceive either no or small positive effects from JFM in Village A and Village B respectively (Figure 2-3 and Figure 2-4). A majority of Village A members responded "no effects." Village B members responded "small positive" effects from JFM.

(2) Forest Protection Committee members

The question of distribution of benefits accrued from JFM activities among FPC members is of little concern in the Khammam study area since JFM activities generated only minimal revenue for FPCs through wage employment.

(3) Other local actors

No protection activities by FPCs meant that neighboring villagers and illegal loggers continued to access to their forests even after the initiation of JFM. This means that there are little effects of JFM over their accesses to forest resources. In spite of the potential for FPCs to prevent illegal logging in the area, the introduction of JFM did not contribute to the prevention of illegal logging activities.

2-3-5 Summary and lessons from the Khammam study area

The case of the Khammam provides several issues, lessons and challenges in association with the JFM implementation.

First of all, **the key concept of JFM in protecting forests in partnership with the FD is not working in the study area.** Forest protection activities by FPCs against illegal loggers have not been supported by the FD. The reluctance of FD officers in supporting FPCs' forest protection activities are indicated in no payment of share of fines to FPCs who caught forest offenders. As a result, illegal logging activities remain to continue.

Secondly, **benefits which FPCs receive from JFM are quite limited in the Khammam study area.** The formalization of their rights to forest derived benefits, which JFM brought about, is a welcoming trend for villages which joined the JFM program. Yet, potential gains from JFM which a new policy has promised, have

not been fully realized. The case indicated several constraining factors for villagers' access to further benefits.

- **Initial interests of villagers to participate in JFM:** In the Khammam case, villages' main reasons to participate in the JFM program lies more in increased access to forests, and wage employment than forest regeneration. This indicates that FPC members may not be interested in JFM activities unless sufficient benefits generate for FPCs.
- **Low level of capacity of FPCs:** The low education level of the FPC members pose practical challenges in engaging in such technical complex procedures of JFM. Combined with the low level of education, the size of villages, which is relatively smaller compared to the Medak district around 40 households, may limit their ability to challenge the authority of FD officers.
- **The little power devolved from the FD towards FPC:** Despite the rhetoric of "joint" forest management between the FD and FPCs, the FD dominated all the local processes from FPC constitution to implementation of decisions and rules (see Table 2-4). As a consequence, FPC members' opinions were not fully incorporated in making a micro plan. Such domination by the FD lowered a sense of ownership of FPC members for the JFM activities.

Table 2-4 Level of involvement of Forest Department (FD), Forest Protection Committee (FPC)s, and NGOs in local level processes in the Khammam district study area

FPC processes	FD	FPC	NGOs
1. FPC constitution			
1-1 Boundary demarcation	◎		
1-2 FPC constitution	◎	○	○
1-3 Selection of representatives	◎	○	○
2. Making decisions and rules			
2-1 Micro plan (forest improvement)	◎	△	○
2-2 Forest protection	N.A	N.A	N.A
2-3 Internal rules over use of forests	N.A	N.A	N.A
3. Implementation of decisions and rules			
3-1 Micro plan (forest improvement)	◎	△	○
3-2 Forest protection	N.A	N.A	N.A
3-3 Internal rules over use of forests	N.A	N.A	N.A
3-4 Facilitation of FPC activities			
3-4-1 FPC meetings	◎	△	
3-4-2 Recording of minutes	◎		○
3-4-3 Account management	◎	△	
3-4-4 Sanction of violators	◎		
3-4-5 Re-election of representative	○	◎	

◎: high level of involvement: taking a leading role in the process

○: some level of involvement: taking a supporting role with some influence in the process

△: minimal level of involvement: being present but with little influence in the process

Source: Author's figure based on interviews

- **Lack of accountability of the FD towards FPCs:** The low accountability of the FD towards to FPCs is observed in no backup of the forest law enforcement for forest protection activities by FPCs and obscure wage payment processes. In particular, no support for forest protection activities has had a serious consequence with no enforcement of forest protection activities by FPCs. It has resulted in continuous illegal logging activities of high valued timber particularly as well as a decline in availability of forest resources for villager's use generally.
- **Time consuming complex JFM implementation procedures:** JFM mandates the preparation of a micro plan and the management of minutes and accounts. These procedures are highly technical and complex and give a rise to high transaction costs, which may discourage non educated FPC members to take an active part in the JFM related activities.
- **Little backup from a grass root NGO to FPCs:** The presence of NGOs is potentially beneficial in mediating relationships between the FD and villagers who used to be positioned in asymmetric power relationships. However, the case study showed that the grass root NGOs support for FPCs was minimal even while a grass root NGO was aware of various issues to be solved.
- **Slow growth of high value timber:** Even while high valued timber in the area bring about potentially large benefits to FPCs. because of the slow growth of timber, such benefits have not been materialized yet. The low accountability of the FD also poses a question over the extent to which the FD may share benefits of high valued trees planted in the plantation area with FPCs when they reach maturity.

As seen, villagers from the Khammam case study area gain only minimal from JFM with the formalization of their rights to forests and wage employment opportunities. As a consequence, many of informants view the JFM project as a merely wage employment activity rather than their own project. In other words, the continuation of FPC activities may depend on the presence of the World Bank financing for such wages. It is therefore questionable JFM activities in the Khammam study area will continue after wage employment opportunities for forest improvement cease unless various limiting factors are overcome.

2-4 Case study 2: Village C and Village D in the Medak district

Village C and Village D in the Medak district are relatively larger with around 300 households, mixed with four different caste groups. This area is characterized with the high scarcity of forest resources. Yet, many depend on forest resources for their livelihood such as fuelwood for cooking, tree poles for construction of houses, agricultural implements, festival facilities, and fodder for livestock.

In contrast with the Khammam district, there is little problem with organized illegal logging. However, the most serious problem which villagers faced before JFM was the rapid deterioration of forest resource and heightening pressure on the remaining forests from all neighboring villagers. In this regard, bringing the JFM program in this area may stop the degradation process and to provide benefits to villagers from regenerated forests. Below, the report analyzes impacts of the JFM program in the study area by investigating the local level process and the effects on local villagers' access to forests.

2-4-1 Constitution of Forest Protection Committees

Similar to the case in the Khammam district, FD officers mainly led the FPC constitution processes. They demarcated forests without villagers' involvement, and identified villages based on proximity to forests for forest allocation. It is noteworthy that because of the forest scarcity in the study area, this forest allocation method resulted in dividing JFM villages with forests officially recognized by the FD and non-JFM villages without any forests. The report discusses the impacts of this allocation method particularly over non-JFM villages in the later section (2-4-4).

After FD officers demarcated forests for potential FPCs, the officers along with a grass root level NGO personnel approached various villages nearby forests including Village C to persuade them into constituting FPCs. At the initial meeting, they emphasized the critical needs to protect and regenerate forests to meet the needs of their future generation given visible decline of available forest resources in surrounding areas. Village C's villagers agreed to their rationale to constitute the FPC and selected a chairperson and MC members. The MC members were chosen democratically, consisted by every caste member whose number of posts is determined by the proportion to the whole population. One year after many of neighboring villages including Village C constituted FPCs, Village D's villagers felt the urgent need to secure the forest resources of their own to meet their demands for forests. They requested the FD for allocating forests for the JFM management. As a consequence, Village C and Village D were allocated 574 ha and 372 ha of forests respectively for their management.

Notably, villagers' main reasons for participation in the JFM program are different from the ones in the Khammam case study villages. Table 2-5 shows respondents' assessment of two main reasons for participating in the JFM program. Two respondents (female and male) are selected from 114 and 70 households respectively from Village C and Village D. The results show that main reasons for their participation in JFM are:

Table 2-5 Respondents' assessment of two main reasons for participation in JFM in Village C and Village D

Reasons for participation in JFM	Village C		Village D	
	1 st Reason	2 nd Reason	1 st Reason	2 nd Reason
Regenerate forests for the future generation	53.7%	18.0%	49.3%	32.1%
Increased access to forest products	9.3%	27.0%	16.9%	39.4%
Wage employment opportunities	9.3%	16.1%	1.5%	2.9%
Social aspect	5.4%	24.1%	4.4%	14.3%
Forced by forest department	1.5%	0.0%	0.0%	0.0%
Forest department promised to provide materials	1.0%	6.2%	0.7%	2.2%
Other reasons	20.0%	8.6%	27.2%	8.0%
Total	100%	100%	100%	100%

Source: Survey conducted by the author

- Regenerate forests for the future generation
- Increased access to forest products
- Wage employment
- Social aspect

Compared to the case in the Khammam district, larger percentage of respondents in the Medak study area responded “forest regeneration” as the first reason to participate in JFM. This also indicates that forest scarcity and degradation was an important factor to motivate them to join JFM in order to secure the remaining resources. The very purpose of JFM as to regenerate forests seems to have played a significant role in motivating villagers to actively engage in forest protection activities as described in the following sections.

2-4-2 Making decisions and rules

After the FPC constitution, similar to the Khammam case, the FD officers prepared micro plans, which are mainly concerned about forest improvement activities with minimal involvement of FPCs.

Yet, FPCs from both Village C and Village D made their own decisions and rules for how to govern the forests. They developed their own forest protection measures to prevent other villagers from entering their forests and devised rules to regulate local use of forest resources as shown in Table 2-6. In the case of Village C, key representatives from each caste and general members discussed and made decisions and rules. In the case of Village D, on the other hand, a few members made such decisions and rules without involving every caste group. As for forest protection, FPCs from both Village C and Village D decided to employ two forest watchers from their own village to protect their forests from forest offenders from both inside and outside villages. In addition, Village C’s FPC introduced additional forest protection measures by giving 25 % of fines collected to those who catch offenders, with the rest to be deposited to the FPC account. Moreover, both FPCs specified rules for kinds and quantities of fuelwood, and tree poles for collection, methods of grazing goats, and forest encroachment.

It is also worth noting that some of rules and practices do not follow official rules. For instance, officially, the FPC is not allowed to collect fines from offenders beyond the amount of 100 rupees. They are supposed to hand over offenders to the FD and it is only after it that they are entitled to 50 % of the fines collected by the FD, with the rest to be deposited to the FD. Another example is that the FPC allowed extraction and distribution of timber according to their rules, which is also not in accordance with the official rule. A FD officer once criticized the FPC for their interpretation of the rules and their illegal practice and he demanded that the fines should be paid to him. But the villagers responded to the officer that they were risking their lives to protect their forest, arguing that “if you oppose our practice, why don’t you patrol the forests and catch all the offenders yourself, then we will give you fair share of fines.” Apparently the FD was in no position to argue against this and he left the FPC to its own devices from then on.

Table 2-6 Rules for forest protection, use of forests in FPCs in Village C and Village D

	Village C (2008)	Village D (-2002)
Forest protection methods	<ul style="list-style-type: none"> · 2 private watchers · 25 % of fines collected go to catchers · Own villagers organize and patrol forests especially BC people · Fines are fixed at a General Body meeting with the presence of village elders 	<ul style="list-style-type: none"> · 2 private watcher paid 1,000 rupees/month up to 2002 · No fine incentives given to catchers · Own villagers did not participate in catching offenders but inform the watchers about them · Fines are fixed by a chairperson of the FPC. Not transparent
Firewood rules	<ul style="list-style-type: none"> · Only dry wood — not cut wet branches · Head loading — free · One cartload of firewood — permission for 30 rupees 	<ul style="list-style-type: none"> · Only dry wood — not cut wet branches · Head loading — free · One cartload/ year free · Permission is there no charging: if they do not inform, they get fines
Tree poles rules	<ul style="list-style-type: none"> · 1-2 agricultural implements — free · Tree poles for marriages — 50 rupees 6 poles and 10 depending poles · House construction: 300 rupees for a cartload · Hats-100 rupees · Tent house 50 % basis compared to a market rates 	<ul style="list-style-type: none"> · 1-2 agricultural implements — free · Marriage poles — free · House construction — free · Tent house is there but with a bad quality — free or only for labor charges
Grazing rules	<ul style="list-style-type: none"> · Not cut branches 	<ul style="list-style-type: none"> · Not cut branches
Forest encroachment rules	<ul style="list-style-type: none"> · Prohibited 	<ul style="list-style-type: none"> · Prohibited
Rules and Restrictions against other villagers	<ul style="list-style-type: none"> · Fees for grazing goats · Fines against grazing of goats, firewood, tree poles · No fines against adda leaf beedi leaf, sheep and bloom sticks 	<ul style="list-style-type: none"> · Fines against grazing of goats, firewood, tree poles · No fines against adda leaf beedi leaf, sheep and bloom sticks

Source: Own interview

Their own initiative of making decisions and rules illustrates the villagers in both FPCs gained power to devise and modify decisions and rules even against official rules and the authority of the FD officers after the initiation of JFM.

2-4-3 Implementation of decisions and rules

Similar to the Khammam case study area, forest improvement activities were implemented based on FD officers' guidance and schedule. The FD paid FPCs wages after the completion of the work. Likewise, FPC members received lower rates of wages than officially claimed rates.

On the other hand, following on their own initiatives in making decisions and rules, both FPCs have also shown a high level of their ownership in implementing other areas of forest related activities. Yet, there are significant differences between these two FPCs in terms of the processes of making and implementation of decisions and rules.

The FPC in Village C showed a high level of transparency and accountability towards general members than the one in Village D. Village C's FPC included all the castes in decision making in meetings and information sharing by making minutes and account available to general members. The FPC managed minutes and their account book by themselves without involvement of the FD officers. On the other hand, the FPC chairperson in Village C included only a small group of members in the processes. The chairperson withheld most of information such as minutes and account book without disclosing them to general members. General Body meetings were rarely held nor were proper recording of minute book available. The low accountability of a chairperson and the lack of transparency of FPC management have resulted in little awareness among members about FPC activities, and asymmetric understanding of internal rules over forest use. Another difference between two FPCs is the degrees of effectiveness in the enforcement and sanctions of decisions and rules in accordance to agreed principles. Village C's FPC made sure that rules for forest protection and internal use of forests be properly and uniformly enforced: they employed two forest watchers and involved own villagers for forest protection by providing 25 % of fines collected by forest offenders to those who catch them. They also made sure that violators of rules be sanctioned according to agreed principles regardless of castes, wealth, gender, or political affiliation. On the other hand, Village D's FPC employed solely two forest watchers without involving other villagers in forest protection. The chairperson also gave partiality to those who belong to the political party which he belonged to: he applied loose control over and sanction against those who belong to his party and stricter control over and severe sanctions against those who belong to an opposing party. This non-uniform enforcement and sanctions caused a serious conflict between those two parties, which led to a collapse of the FPC management. As a result, Village D's FPC activities have stopped since 2002.

2-4-4 Effects on accesses of local actors to benefits from forest related activities

In comparison with the Khammam district study area, the Medak district study area showed significantly different local level processes and more diverse effects on local actors' access to forest derived benefits. Since the introduction of JFM, some villages such as Village C have started to apply strict enforcement of forest protection activities while others have not been effective in such activities. These differences in the effectiveness of implementation have produced diverse effects on accesses of various local actors both within and outside JFM villages to forest derived benefits.

(1) Forest Protection Committees (FPCs)

For instance, there are significant differences in the degree of gains from JFM between Village C, which is an example of the effective implementation of rules and decisions, and Village D which is an example for the ineffective implementation.

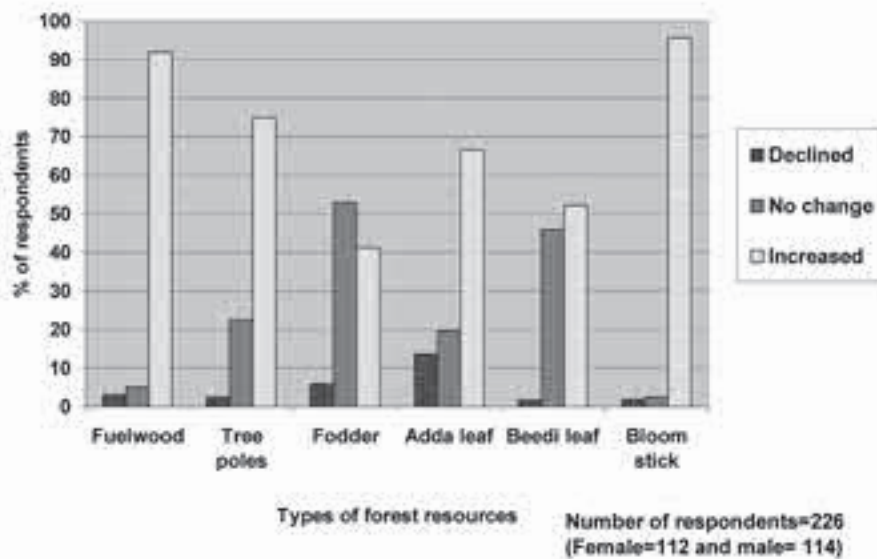
In the case of Village C, because of their nearly 10 years of effective and strict enforcement of forest protection and internal regulation of forest use, their forest have started to regenerate and the FPC has begun to gain from their exclusive access to increased amounts of these resources.

The increase in available forest resources is also notable in Figure 2-5. 226 respondents from 114 households were asked to assess the direction of changes (e.g. declined, no change or increased) in availability

in key forest resources as a result of JFM. Results show that a majority of respondents assessed “increased” for fuelwood, tree poles, adda leaf, beedi leaf and bloom sticks (Figure 2-5).

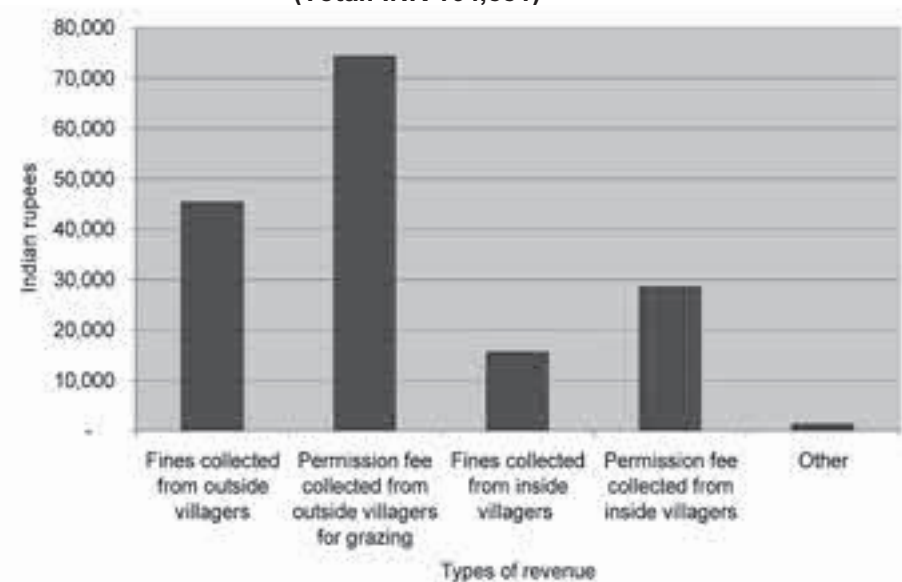
The FPC also gained further from the reduction in bribes to the FD officers due to the formalization of their access to forests, minimal wages from forest improvement activities, and permission fees and fines from inside and outside villagers. In particular, FPC gained a large amount of revenue from permission fees and fines. For example, during the period between 1997 and 2002, the FPC collected a total of 164,861 rupees (which is equivalent of approximately USD 4,000). Figure 2-6 shows the composition of the total revenue and it illustrates that a large portion of revenue around 70 % was collected from outside villagers during the period.

Figure 2-5 Village C: respondents’ assessment of change in availability in key forest resources as a result of JFM



Source: Survey conducted by the author

Figure 2-6 Village C: composition of revenue generated from 1997-2002 (Total: INR 164,881)

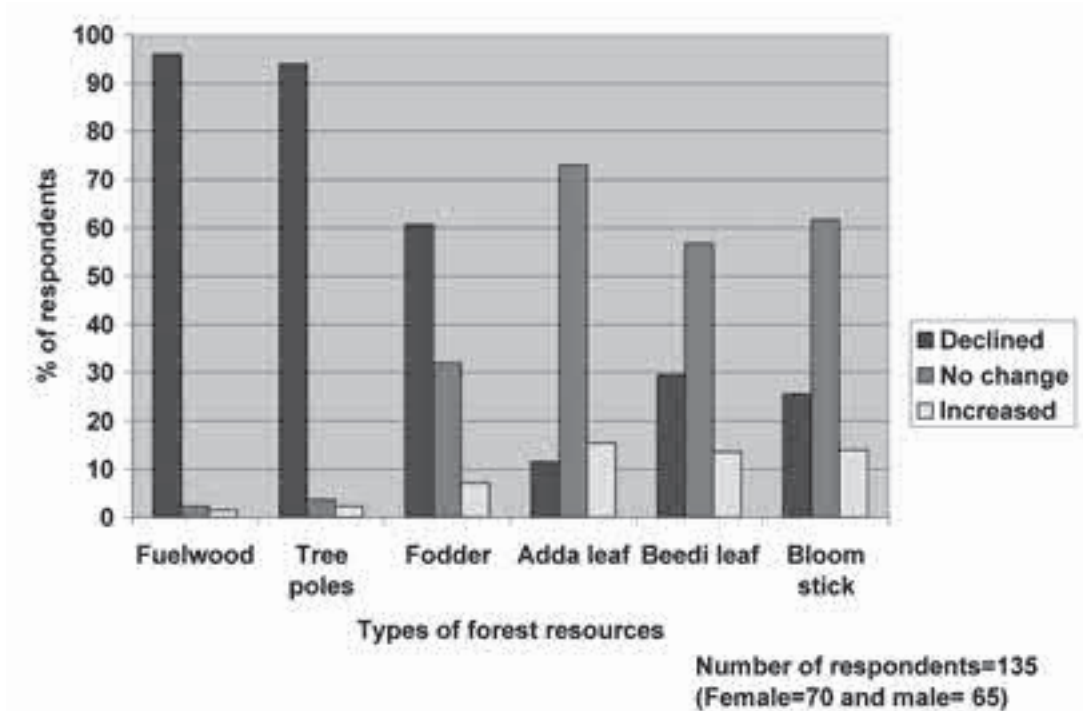


Source: Survey conducted by the author

In the case of Village D, on the other hand, the FPC activities have stopped since 2002 due to the political interference and internal conflicts over the FPC management. The collapse of Village D’s FPC also meant no regulations or control applied over use of forests under Village D’s territory since 2002. This has led to a more or less open access situation where both own and outside villagers started to access to forest resources freely without any limits over collection amounts. As a result, Village D’s forests have been under rapid degradation.

The general trend for a declining availability in forest resources is shown in Figure 2-7. A majority of 135 respondents from 70 households view “declining” trend especially for fuel wood and tree poles (Figure 2-7). Furthermore, Village D also lost employment opportunities due to the closure of the FPC activities. Nor have permission fees or fines been collected since 2002.

Figure 2-7 Village D: respondents’ assessment of change in availability in key forest resources as a result of JFM

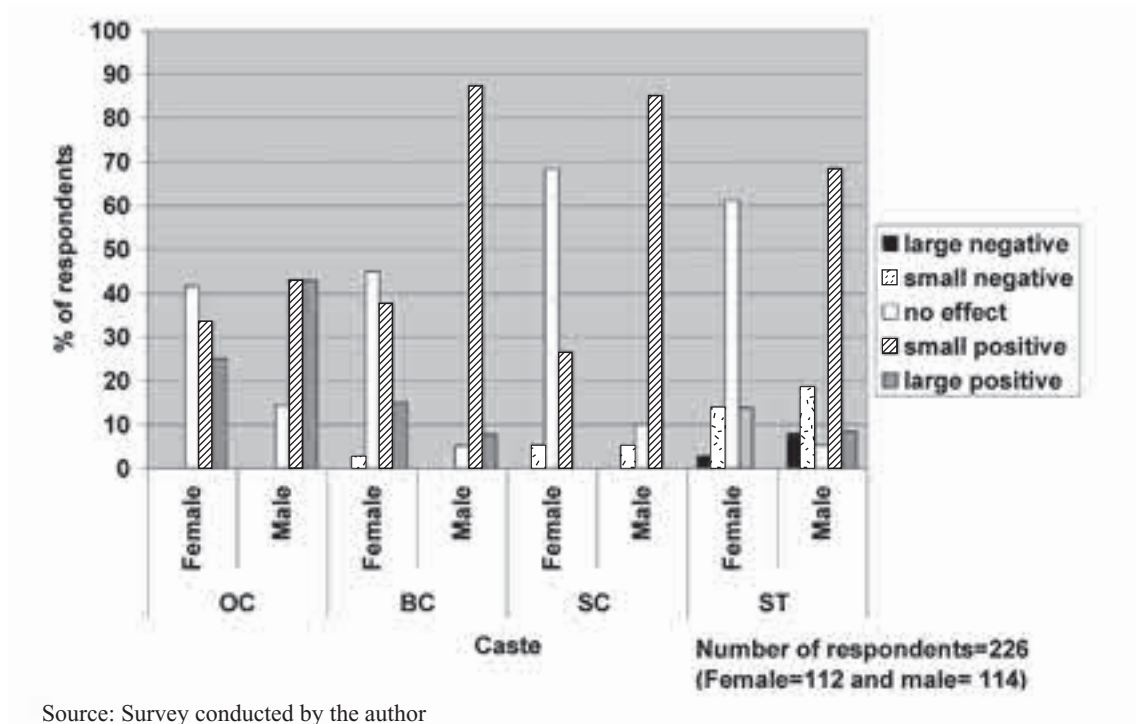


Source: Survey conducted by the author

In summary, the case of Village C shows that the effective implementation of their own decisions and rules enabled the villagers to gain exclusive access to increased forest resources in their territory and additional revenue from JFM related activities. On the contrary, the case of Village D shows that if the implementation is not successful, FPC villages may face severe difficulty from declining availability of forest resources and loss of access to additional revenue potentially available from JFM related activities.

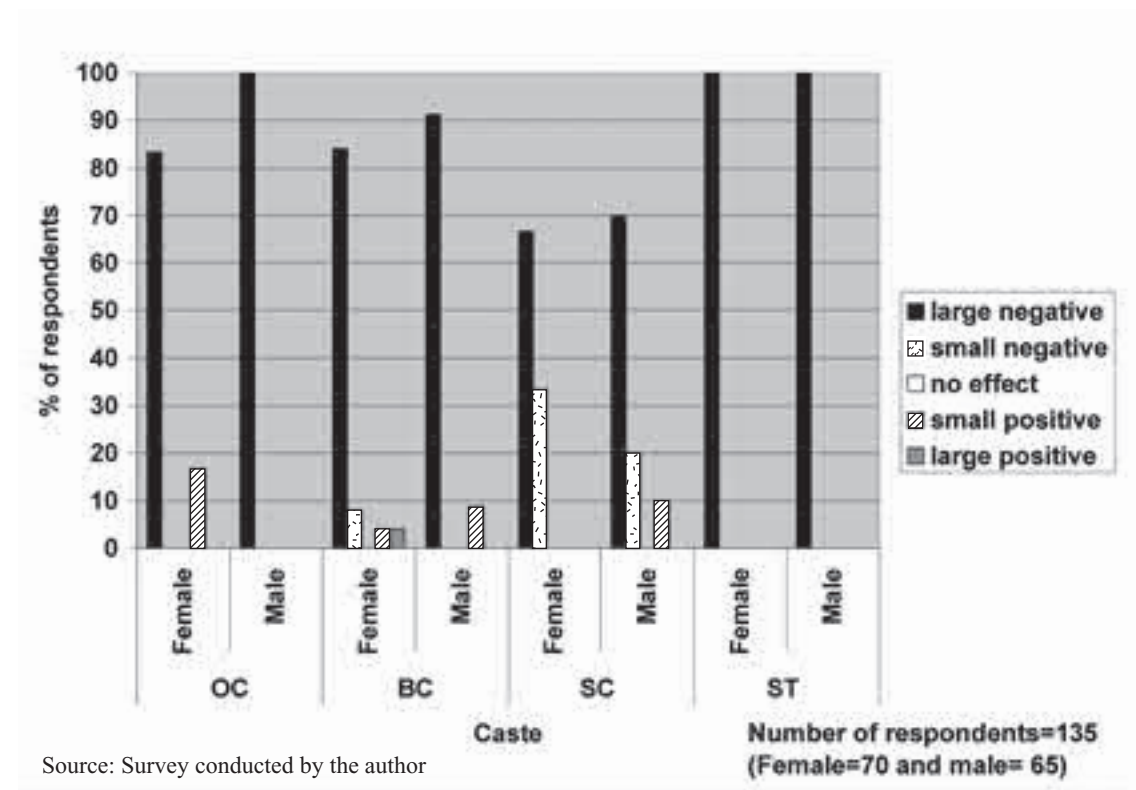
The quite different results between these two villages in terms of degrees of benefits from JFM are also reflected in respondents’ assessment of the magnitude and direction of the changes in benefits they derived from forest related activities as a result of JFM in Village C and Village D in Figure 2-8 and Figure 2-9 respectively. Results show that while a large percentage of Village C’s respondents in different castes perceive positive effects from JFM, a majority in Village D perceive negative effects from JFM.

Figure 2-8 Village C: respondents' assessment of the magnitude and direction of the change in benefits they derive from forest related activities as a result of JFM



Source: Survey conducted by the author

Figure 2-9 Village D: respondents' assessment of the magnitude and direction of the change in benefits they derive from forest related activities as a result of JFM



Source: Survey conducted by the author

(2) Forest Protection Committees members

In the case of Village D, a majority of villagers perceive a declining trend of forest resources in particular fuelwood, tree poles, and fodder, and lost access to additional benefits from JFM related activities. Such negative effects have been felt by all the caste groups regardless of caste or gender as shown in Figure 2-8.

On the other hand, as shown, the case of Village C presents a success story for JFM. Yet a closer look reveals that the benefits and costs of JFM are asymmetrically distributed depending, among other things, on caste, gender and occupation. The report illustrates this pattern by considering first which castes of villagers are punished for illegal forest use and which benefits from the revenue generated, the report then relates this discussion of issues of gender and occupation. To exemplify the effects of internal regulations over occupation, the report will also draw an example from Village E's FPC with highly strict enforcement of regulations over own villagers.

As discussed above, one set of rules were devised by the FPC which would apply to all villagers in Village C. Yet, these rules and restrictions were mostly felt by those whose livelihoods depend predominantly on forests. This is typically the lower caste groups such as SCs and STs and the landless, due to their poverty, and it is typically women, since they are charged with the task of collecting forest products. According to household surveys conducted in the area, most OC people buy fuelwood from other caste groups rather than collecting them. In contrast, STs collect more fuelwood than other castes for subsistence use and sale to other castes such as OC. It is therefore easy to see that the restrictions over collection amounts over fuelwood and tree poles place more pressure on ST people than on OC people. This fact also appear in the high frequency of violation of rules by SCs and STs compared to BC and OC. Whenever they are caught in violation, they are forced to pay fines to the FPC. Additionally, some groups of STs are in the wood cutting business, which require a large amount of tree poles. At present they have to pay additional fees to the FPC to go beyond their permitted amounts, and this makes it increasingly difficult to sustain their business as usual. For these people it is not at all clear that the new efficient forest protection system is beneficial; after all they used to easily be able to avail themselves of required resources. As one frustrated ST person explained: "fighting with the government is easy but fighting with our own villagers is very difficult..."

If the punishments inflicted by the new system hits villagers unequally, so does the benefits. As mentioned above, the success of the FPC system meant that very significant revenue was generated from fines and permits. In fact the revenue was significant enough to permit the construction of four Hindu temples in the main village. The decision to use the money in this way was taken by the FPC, which has representatives from all castes. Yet the building of these temples mainly benefited those belong to higher castes. It is hard not to relate this to the fact that not only was the chairman of the committee from OC and the vice-chair from BC. Of course, the caste system has a long and hierarchical history, which may make it very difficult for lower caste to resist the wishes of higher castes even if they formally have the right to do so. In any case the consequence of using the money for building these temples was that the benefits of years of JFM revenue went entirely to OC and BC, since SCs – as previously untouchable – are not permitted to enter in Hindu temples, whereas STs have no interest in doing so.

Aside from caste hierarchies, another negative effect was observed over women. The report has already noted how women are the main collectors of NTFPs and therefore suffer more from restrictions on such resources than men. However, women are disadvantaged in another sense as well, since, contrary to the men, they have little chance of speaking up about their problems in public. This may be considered paradoxical during times where almost all World Bank projects have promoted are required to have empowerment of “gender component.” Yet for various reasons their participation in FPC meetings is almost none. For, it is not considered desirable for women to take an active part and to express their opinions in a male dominated gathering. The author interviewed many women who expressed how uncomfortable they felt in attending FPC meetings. Even though it was a project requirement that half of the management committee would be occupied by women, this participation was merely nominal, as in reality husbands attend meetings instead of the chosen women. As a result women’s point of view are not reflected in decisions and rules related to forest related activities, which have a direct bearing on their livelihood. In these situations referring to caste and gender it might be said that we are in the realm of boundaries that are supported by so much cultural and historical weight, that there is very little chance that policy measures such as JFM can make a change good intentions and gender components aside.

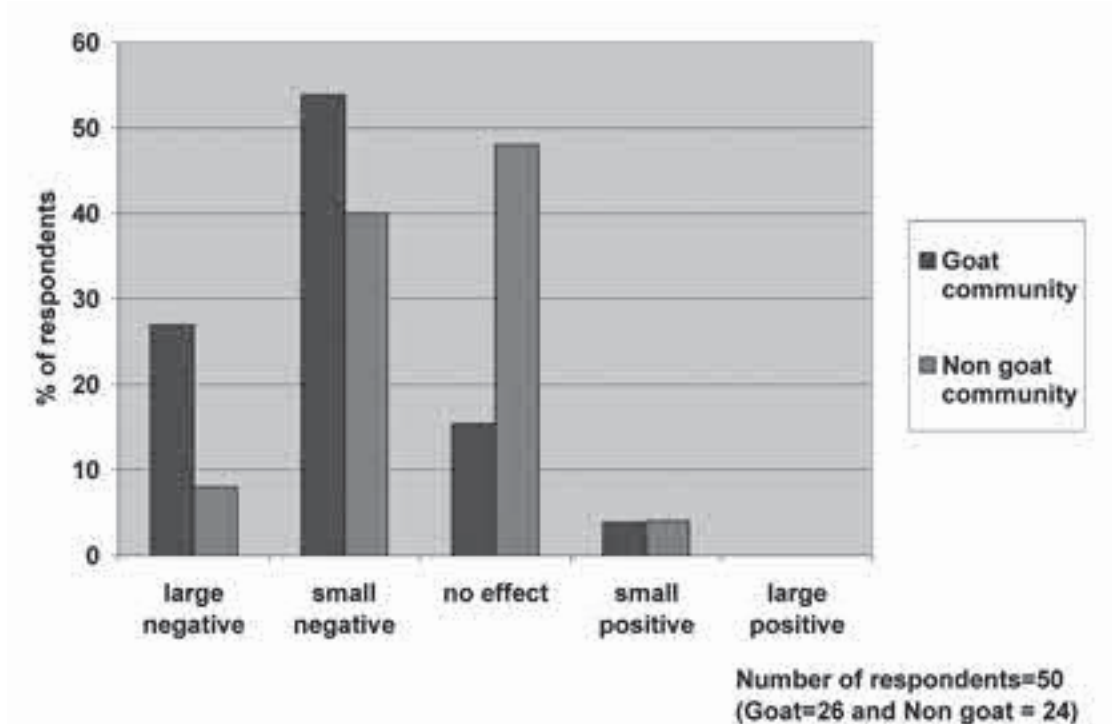
Such asymmetric distribution of costs and benefits are also reflected in the Village C villagers assessment of benefits from forest related activities as a result of JFM in Figure 2-8. A closer look at perceptions of benefits in four different castes reveals that larger proportion of higher caste groups such as OC and BC have responded “small positive” or “large positive” than lower castes such as SC or ST. As for difference in their assessment in terms of gender, Figure 2-8 also shows that relatively larger percentage of male respondents assess more positive effects from JFM than female respondents.

But such asymmetric impacts on distribution of benefits and costs within villages with FPCs may occur not only among different castes or gender, but also among those with different livelihood occupation. For example, the forest boundary demarcation facilitated by JFM adversely impacted many herders of goats in the study area. Herders of goats have notorious difficulties with boundaries as their customary practice is to move the goats over 20-30 km per day for grazing. Goat herders also cut tree branches to feed new grown leaves to goats. For such reasons the FD has long considered goats harmful for the regeneration of forests. Before JFM was implemented, the FD used to collect fees per goat from each owner and to pose fines for cutting tree branches. However with the JFM, the fee collection system was abolished. Instead FPCs now have the task of regulating grazing. They have done so by prohibiting goat herders in the FPC village from cutting tree branches and by completely excluding herders from outside village.

To exemplify the impacts on herders of goats, the report draws on another case example from Village E which was previously known as a “goat village” because of the large population of these animals. Around 50 out of 382 households depended on goat raising as their principal livelihood activity. As in Village C, the Village E’s FPC also developed and applied strict rules and restrictions over forest use including grazing. The level of enforcement by the Village E was equally strict as the one in Village C’s FPC. However, due to the large population of goats in the village, the forests within the FPC boundary turned out to be insufficient to meet the dietary requirement of goats. During the period between 1998 and 2008, the population of goats in Village E

declined from around 2,500 to 1,000. In this difficult situation, goat herders were forced to either cut tree branches illegally or move to neighboring forests for grazing. Since the introduction of in the area, herders of goats in Village E have thus been caught numerous times both by their own villagers and neighboring FPCs. Unsurprisingly, a majority of goat herders have strongly negative feelings about the effects of the JFM program. Meanwhile, the FPC views goat herders as both the main violators and the main source of revenue as they are forced to continuously pay large fines for their abuses. Figure 2-10 shows respondents' assessment of the magnitude and direction of the change in benefits they derive from forest related activities as a result of JFM. Results show that a larger percentage of herders of goats, "goat community" perceive more negative from JFM than general members, "non goat community."

Figure 2-10 Village E: respondents' assessment of the magnitude and direction of the change in benefits they derive from forest related activities as a result of JFM



Source: Survey conducted by the author

(3) Other local actors

The case has shown that JFM can be beneficial to those villages which are a part of the JFM program and successful in the implementation of decisions and rules even though there remains an issue of asymmetric distribution of costs and benefits among members. However, such benefits may accrue at the expense of other neighboring villagers. Indeed, the establishment of JFM villages in the Medak study area caused seriously negative impacts over villagers without any official forests.

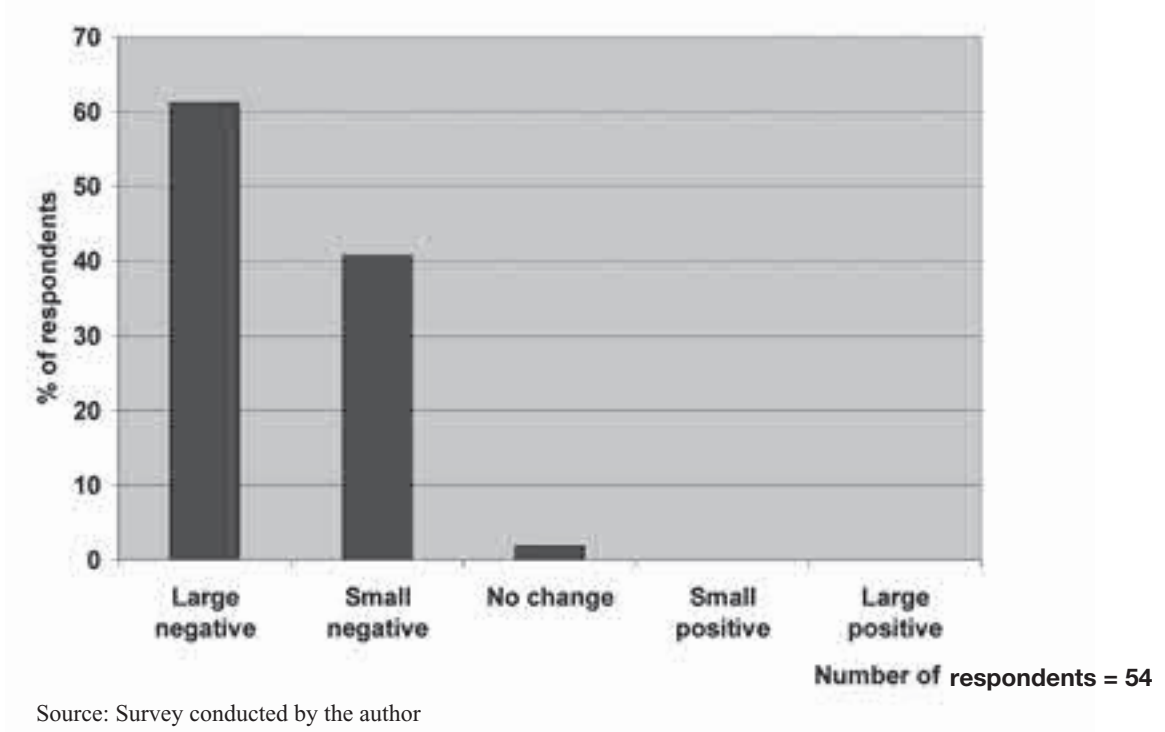
After the initiation of JFM, the FD officers parceled and distributed forests to nearby villages for their management. In the Medak area, as forests being scarce, all forests have been allocated to nearby villages,

leaving no forests for further allocation. This forest allocation method divided JFM villages with forests officially recognized by FD and non-JFM villages without any forests. This has caused seriously damaging consequences over non JFM village exemplified by Village F. The village did not receive any forests by the FD while all parts of nearby forests were allocated to other surrounding villages which joined JFM. Several years after the initiation of the JFM program in the area, Village F’s villages started to experience increasing difficulty in accessing to forests in particular to obtain fuelwood and tree poles since their access to forests started to be blocked by other neighboring villages. If they are found to collect these products by FPCs in other villages, they have to pay a large amount of fines.

In fact, many villagers have been caught by other villagers and forced to pay fines. Among 55 households surveyed, 22 responded that they had been caught by the FPC members in other villages. Their total amounts of fine payments amount to 48,600 rupees (approximately USD1,200) —during the period between 1998 and 2008. As a consequence, a majority of Village F’s villagers perceive largely negative impacts of JFM program on their livelihoods as illustrated in Figure 2-11. This shows respondents’ assessment of the magnitude and direction of the change in benefits they derive from forest related activities as a result of JFM in Village F. Results show that 60 % of 55 households said “large negative” and 40 % said “small negative” as a result of JFM.

In summary, results of the case study in the Medak show that FPCs with the effective enforcement of regulations and rules gain significantly from increased amounts of forest resources and additional revenue as exemplified by Village C. At the same time, however, there remains a problem of asymmetric distribution of

Figure 2-11 Village F: respondents’ assessment of the magnitude and direction of the change in benefits they derive from forest related activities as a result of JFM



costs and benefits among different caste groups, gender and occupation. Benefits are concentrated more for higher castes, and male but costs are more felt by lower castes, female and herders of goats. On the other hand, FPCs without the effective enforcement regulations and rules may experience a further decline of forest resources as shown in the case of village D. Yet, the far more damaging effect was observed in villages excluded from the JFM program as village F was the case with since their access to nearby forests have been blocked by neighboring FPCs and they have been forced to pay fines to FPCs in numerous occasions.

2-4-5 Summary and lessons from the Medak study area

In contrast to the Khammam district study area, the Medak district study area showed significantly different local level processes and diverse effects on local actors' access to forest derived benefits. The Medak case presents several issues, lessons and challenges as follows.

First, on the contrary to the Khammam study case where FPCs are not protecting forests, the Medak case showed that **FPCs can facilitate successful protection and conservation of forest resources** in some FPCs if forest protection activities are properly enforced as exemplified in the case of Village C.

Second, **benefits which FPCs may gain from JFM are potentially large** but the extent to which FPC can gain from JFM may depend on the following factors:

- **Degree of power which FPCs can exercise in local level processes:** On the contrary to FPCs in the Khammam study area, FPCs in the Medak study area demonstrated a high sense of ownership in the FPC activities by taking an active role in many of local level processes related to forest management. The case study in the Medak has demonstrated that those villagers included in the JFM program could gain power not only to make but also to implement decisions and rules for how to protect and govern the designated forests as shown in Table 2-7. There are several possible reasons for why the Medak case study villages could exercise such power as follows.
 - **High level of interest in participating in FPCs because of forest scarcity:** Because of the scarcity of forests, there was a high level of competition among local villagers over remaining forest resources. The scarcity of forests has given incentives for villagers to constitute FPCs to secure benefits from forest resource by excluding others' access to forests.
 - **Larger number of the educated in the village who can read and write:** The larger sizes of the villages with approximately 200 to 300 households in the Medak area as well as a high proportion of the educated could enable them to form the counter power vis á vis the FD authority.
 - **Active support from a grass root level NGO to FPCs:** A grass root level NGO has provided an active support for FPCs by sensitizing them about their roles, responsibilities and rights. When problems arose in FPCs, the NGO played an intermediary role in solving issues as well as, if necessary, addressing the issues to the FD for appropriate actions.

Table 2-7 Level of involvement of Forest Department (FD), Forest Protection Committee (FPC)s, and NGOs in local level processes in the Medak district study area

	FD	FPC	NGOs
1. Institutional recognition			
1-1 Boundary demarcation	⊙		
1-2 FPC constitution	⊙	⊙	○
1-3 Selection of representatives	⊙	⊙	○
2. Making decisions and rules			
2-1 Micro plan (forest improvement)	⊙	△	△
2-2 Forest protection		⊙	
2-3 Internal rules over use of forests		⊙	
3. Implementation of decisions and rules			
3-1 Micro plan (forest improvement)	⊙	△	△
3-2 Forest protection		⊙	
3-3 Internal rules over use of forests		⊙	
3-4 Facilitation of FPC activities			
3-4-1 FPC meetings	△	⊙	△
3-4-2 Recording of minutes		⊙	
3-4-3 Account management		⊙	
3-4-4 Sanction of violators		⊙	
3-4-5 Re-election of representative	△	⊙	△

⊙: high level of involvement: taking a leading role in the process

○: some level of involvement: taking a supporting role with some influence in the process

△: minimal level of involvement: being present but with little influence in the process

Source: Author's figure based on interviews

● **Effectiveness of implementation of decisions and rules by FPCs:** As illustrated in the different results between the Village C and Village D cases, whether FPCs may gain from JFM depends on how effective FPCs are in implementing their decisions and rules. The case study also showed that the implementation effectiveness depends on:

• **Degree of accountability and transparency of chairperson and MC towards general members:**

The Medak study indicated that the leadership quality of chairpersons largely affects how a FPC is managed. It was observed (the degree of effectiveness of implementation of decisions and rules by FPCs) depends on how decisions and information are shared to village members and how uniformly violators are sanctioned.

On the other hand, there remain several constraining factors for FPCs to gain further from JFM.

● **Time consuming complex JFM implementation procedures:** Similar to the Khammam case, the technical nature of micro plans creates obstacles for FPCs to actively engage in making such a plan. While some inputs from FPCs were observed in micro plan making, FD officers made an overall decision for kind of activities to be conducted in the FPC forests.

- **Limited degree of accountability and transparency of the FD towards the FPCs:** Whereas FPCs made their own decision and rules for forest protection and internal use of forests, a micro plan was made and implemented mainly by the FD. The wage payment process of forest improvement activities was also unclear.
- **Slow growth of high value timber:** High valued timber in the area may bring about potentially large benefits to FPCs, but because of the slow growth of timber, such benefits have not been materialized yet. Nevertheless, the high ability for FPCs to manage JFM activities suggests that FPCs are highly likely to be able to capture benefits when they reach the maturity.
- **Degree of political interference:** Since the FPC management generates a potentially large amount of revenue, there is increasing pressure from political party members in taking control over the FPC management. When party politics are involved, there is a high risk of losing the level of accountability and transparency in the FPC management, which, in turn, may lead to a collapse of FPCs as was the case with Village D.
- **Risk of asymmetric distribution of costs and benefits among members:** JFM may promote elite capture among FPC members while marginalizing others depending on how rules affect different people and how benefits accrued to the FPC are distributed among members. While higher caste and male tend to gain from JFM, the weaker sections such as lower caste, women and herder of goats are unlikely to gain as much benefits or even to lose from JFM unless special attention and measures are given to the weaker sections.

Third, on the other hand of the possibilities of positive outcomes of JFM in terms of forest regeneration and more gains for villagers included in JFM, the case study showed that such positive outcomes may arise at the expense of other local people. In fact, there is a **high risk of causing significantly negative consequences over local villagers especially those who are not included in JFM due to the scarcity of forests.**

- The Medak case study showed that the forest demarcation had resulted in villages with JFM forests and villages without JFM because of the scarcity of forests. No additional forests remain for further allocation for JFM management. This has caused seriously damaging consequences over villagers who are not part of JFM to meet their forest needs as exemplified by Village F's case. They face severe difficulty in securing forest resources because their access as to nearby forests have been blocked by neighboring FPCs and because they have been forced to pay fines to FPCs in numerous occasions.

3. Overall lessons learned from the case study

Results of the case study from the Khammam and Medak district study areas have demonstrated that **the same policies (property rights) under JFM have produced significantly different processes and diverse effects at the local level.** In other words, while JFM policies in AP offer a beneficial arrangement for local villages who participate in JFM, whether and to what extent local villages can reap such benefits depends on various factors in addition to policies. This confirms Ribot and Peluso (2001)'s viewpoint that one needs to carefully attend to additional factors to property rights to understand reasons for which local actors are able or unable to benefit from such property arrangements.

In understanding additional factors, the case also illustrated that, as Ribot and Agrawal (1999) argued, **power and accountability relationships of involved actors (e.g. FPCs, the FD, illegal loggers, and NGOs) play an important role** in influencing the degree to which each local actor gain or lose from JFM. Moreover the case study results confirm Agrawal and Gibson (1999)'s argument **that the characteristics of local actors such as resource endowments and size, and education level of villagers do matter** in influencing the level of motivation for local actors to participate in JFM and to what degree they can exercise power in local level implementation processes.

In the following, the report summarizes more specific reasons which enable or disable abilities of local actors to benefit from JFM.

Firstly, **to what extent FPCs gain from JFM** depends on numerous inter-related factors such as

● Villagers' level of interest in and motivation for FPC activities:

- **Degree of forest resource endowments:** The Medak case study indicated the forest scarcity was one of key factors to motivate villagers to actively engage in forest protection activities. This may be because potential gains from excluding others are larger in the forest scarce area as competition for remaining forest resource is high. On the other hand, potential gains from forest protection are likely to be smaller in resources abundant area where villagers do not have particular reasons to exclude others in order to secure their resources as exemplified in the Khammam study area. However, the Medak case also showed that allocation of forests in forest scarce area is prone to a high risk of causing detrimental socio economic consequences over some local villagers such as those who are excluded from the JFM program.
- **Degree of actual benefits from JFM in comparison with the degree of transaction costs:** JFM procedures such as micro plan making, holding meetings and recording minutes and accounts give a rise to high transaction costs for FPCs. In this sense, villagers' interests are likely to depend on the degree of benefits which they can actually gain from JFM beyond the transaction costs. As shown in the Medak study area, villagers have sufficient incentives to engage in JFM activities if forests are

scarce. However, if forests are sufficiently abundant and villagers do not perceive particular needs to protect forests, villagers' interests for JFM activities are likely to depend more on the extent to which they can gain additional benefits such as timber, trees in plantation areas, wages, permission fees and fines from forest offenders. However, if such benefits are not obtained by FPCs, villagers may lose interests in engaging in the JFM activities as observed in the Khammam study area.

● **FPCs' ability to exercise power in making and implementation of decisions and rules**

- **Size of villages and education level:** On the contrary to a prevailing view that small and homogenous community may be able to better manage resources, the case study showed the opposite results. Villages which are large and heterogeneous in terms of castes in Medak study area could exercise more power in making and implementation of decisions and rules regarding governing forests than villages which are small and homogenous. The main reasons may be the education level, size of villages and the ability to challenge the authority of FD officers. The education level among Koya tribes in the Khammam study area is significantly lower than villages in the Medak study area. Khammam study villages had only a handful people who are literate whereas the Medak study village had a large number of educated up to 10 years of education. In this context, technical complex JFM procedures formed serious barriers for those without sufficient level of education particularly in the Khammam study area to take a full responsibility in JFM implementation. Moreover, villages in the Khammam study area are significantly smaller with around 40 households compared to the Medak study area with around 150 to 350 households. The size of villages may also strengthen or weaken villagers' ability to challenge the authority of the FD officers.

● **Degree of effectiveness of FPCs' implementation of decisions and rules:** As illustrated in the different results between Village C and Village D cases, whether FPCs may gain from JFM depends on how effective FPCs are in implementing their decisions and rules. Furthermore, such effectiveness depends on:

- **Degree of accountability and transparency of chairperson and MC towards general members:** The degree of accountability and transparency depends on the quality of leadership of the chairperson, the extent to which decisions and information are shared to general members and the extent to which decisions and rules are implemented members in accordance to agreed principles regardless of their background such as wealth, caste, gender and political affiliations.
- **Degree of representation of a chairperson and MC members:** The degree of representation in MC depends on whether chairpersons and MC are democratically elected in a transparent manner.
- **Degree of democratic participation of general members in making and implementation of decisions and rules:** Whether the participation of the general members is actually promoted in practice or whether special attention are provided to weaker sections (e.g. women, lower castes, and landless) to promote their actual participation are also important factors for influencing the degree of effectiveness.

- **Degree of political interference in FPC management:** The Medak case showed that there is a risk of causing internal conflicts when political party politics get involved in FPC activities. When internal conflicts heighten, FPC management is highly likely to become dysfunctional as illustrated in Village D's case in the Medak district.
- **Degree of accountability of the FD towards FPCs:** The accountability of the FD towards to the FPC in the following areas significantly influence the degree of benefits which FPCs gain from the JFM program as illustrated in both Khammam and Medak case studies.
 - **Degree of transparency and degree of willingness of the FD to promote FPCs' participation and inputs** in making and implementation of micro plans, wage payment procedures and management of accounts and minutes.
 - **Degree of forest law enforcement back up support:** Whether FD officers ensures a swift payment of fines from forest offenders to FPCs influences the willingness of FPCs to engage in forest protection activities as shown in the Khammam study case.
 - **Keeping promises towards FPCs:** The Khammam case study showed that FD officers breaking promises of providing materials to villages made villagers resentful and unwilling to cooperate with FD officers. This indicates whether FD officers keep promises seriously affects villagers' motivation to engage in FPC activities.
- **Degree of supports from a grass root NGOs for FPCs:** In the Medak case study area, a grass root level NGO provided guidance and training to FPCs so that FPC can better manage their activities. The case also showed that the presence of an active support from NGOs can help FPC members to exercise power and act upon their rights.

Secondly, the case study showed that to what extent **JFM promotes equitable distribution of benefits among FPC members also depends on several inter linked factors** such as

- **Degree of representation of FPC chairperson and MC**
- **Degree of accountability and transparency of the FPC chairperson and MC towards general members**
- **Degree of democratic participation of general members in making and implementation of decisions and rules**
- **The way in which decisions and rules affect different members:** How locally devised rules and regulations affect different members is another important factor which influences benefit distribution. For instance, the Medak case study indicated that certain rules and restrictions may adversely affect those who depend more on forests for their livelihood such as lower caste, women and herders of goats.

- **The way in which revenue generated for FPC is distributed among members:** The way in which benefits generated for FPCs is distributed to general members also affects equitable benefit distribution.

Third, **how the establishment of JFM villages impacts the way in which neighboring villages' access to forest derived benefits** depends on a combination of the factors such as

- **Methods of forest demarcation and allocation:** As illustrated in the Medak case, forest demarcation and allocation in forest scarce area is prone to a high risk of causing detrimental socio economic effects over those who were not included in JFM programs. If forests are divided among certain groups of people while excluding others, JFM may divide winners who can have exclusive access to the allotted forests and losers who are excluded from neighboring villagers as seen in the Medak case.
- **Degree of forest protection measures applied by FPCs:** Whether JFM impacts accesses of neighboring villagers or illegal loggers largely depends on how strictly forest protection measures are enforced by FPCs.

Based on the understanding of the reasons which enable and disable local villagers' access to forest derived benefits under JFM, current main challenges are presented as follows:

- **High transaction costs of JFM:** In general, under JFM, FD officers and FPC need to follow numerous formal procedural requirements such as the preparation of a micro plan, holding meetings, recording minutes and management of accounts. In particular, the current micro plan is too technical for FPC members to take an active part in, which requires several years of education. The high transaction costs may also provide disincentives for both FD officers and FPCs to actively engage in FPC activities.
- **Complex and unclear procedures for sharing benefits for high value timber:** While official rules allow for 100 % of incremental volume of timber to be provided to FPCs, timber in both study areas yet to mature. Nevertheless, the complex and unclear procedures for sharing such benefits may limit the extent to which FPCs may gain from the revenue generated from timber resources in the future.
- **Lack of capacity building support for the FPC with low level of capacities:** The Khammam case demonstrated that FPCs had little capacity to take an active part in the above technical complex JFM implementation processes mainly due to their lack of sufficient education. However, no trainings have been so far provided to either FPCs to raise their capacity.
- **Risk of elite capture and marginalization of weaker sections within FPCs:** The Medak case study has shown that while higher caste and male tend to dominate in decision making processes, the participation of women is almost none due to social and cultural barriers. Moreover, there is another risk that lower caste groups are excluded in benefit sharing.
- **Low level of accountability of the FD towards FPCs:** The low level of accountability is observed with unclear wage payment processes and lack of support for forest protection activities by FPCs in both case

study areas. The low level of accountability of FD officers may counteract against the principal aim of JFM to protect forests as was the case in the Khammam study area. Furthermore, the presence of the low accountability of the FD also poses a question over the extent to which the FD may share benefits from high valued timber with FPCs when they reach maturity.

- **Unchanged mind set and reluctance of FD officers to act as a facilitator:** In both study areas, it was observed that FD officers' mindset as an authoritative figure remained instead of acting as a collaborator to FPCs. Their reluctance for collaboration may also attribute partly to their declining authoritative power and partly to increased amounts of work because of JFM. Many FD field level officers complained that their workload had increased by multifold after JFM because it involves numerous organizational procedures.
- **Forest demarcation and allocation methods are not participatory and without measures to mitigate potentially adverse impacts**
- **Risk of creating dependence on donor funding to carry out JFM activities:** Unless FPCs gain sufficiently from the JFM activities other than wage employment opportunities, JFM may create villagers' dependence on wages financed by donor funding as illustrated in the case of the Khammam study area. Such dependence on donor funding creates a risk that FPC activities may not continue beyond the project funding.
- **Lack of capacity of some grass root NGO to support FPCs:** As illustrated in the Khammam case study, some grass root NGOs have quite limited ability to act as a facilitator to support FPCs and to raise critical issues to the FD when necessary.

4. Policy recommendations

The presence of diverse impacts highlighted **the critical need to**

- **Carefully assess local characteristics and power and accountability relationships,**
- **Design implementation strategies which fit in local contexts, and**
- **Advocate policy changes which mitigate negative effects and enhance positive effects from JFM**

Based on lessons learned from the case study, this report concludes with the following specific policy recommendations for policy practitioners in order to ensure further benefits as well as equitable distribution of benefits derived from forest related activities under JFM. Policy practitioners may include international donors which provide funding for JFM, the Ministry of Environment and Forests, the Forest Department, grass root and state level NGOs working primarily with JFM villages and FPC members.

4-1 To maximize benefits for FPCs

- **Minimize transaction costs** accruing from JFM by simplifying designs of a micro plan and JFM implementation procedures.
 - Simplify micro plan structure and JFM implementation procedures: In order for FPC members who are not well educated to be able to engage in micro plan making and other aspects of JFM implementation, the simplification of the structure of the micro plan and implementation procedures is of crucial need. In addition, it is important to provide adequate training for capacity building of FPCs in carrying out the JFM activities such as micro plan making.
- **Maximize benefits for FPCs from JFM**
 - Encourage FPC participation and devolve maximum power to FPCs to the extent possible in demarcating forest boundary, and making and implementation of decision and rules.
 - Provide capacity building support especially for those FPCs without adequate level of education to manage JFM activities especially in the area of micro plan making, and management of minutes and accounts.
 - Ensure accountability and transparency of the FD towards FPCs in
 - Preparation of a micro plan: It is important to reflect FPC members' needs and opinions into a micro plan (e.g. reflecting villagers' opinions for tree species to be planted in plantation areas, kinds of

forest improvement works to be in their forests).

- Wage payment processes for forest improvement activities: In order to assure maximum payment to be made for FPCs for forest improvement activities, it is necessary to promote transparency in disclosing official rates for each kind of activities to FPC general members.
- Back up forest law enforcement: It is critical to ensure the proper enforcement of laws and policies to support FPCs' forest protection activities with swift payment of fines collected from forest offenders.
- Benefit sharing procedures for high valued timber and other forest products.
- Enhance the capacity of FD officers as a facilitator.
 - Changing the mind set of FD officers to act as a facilitator.
 - Provision of training for FD officers in relation to JFM facilitation works such as micro plan, meeting, procedures for sharing benefits of high valued timber in plantation, methods for capacity building training provided for the FPCs, conflict management.
- Promote grass root NGOs' involvement and enhance their capacity as a mediator between the FD and FPCs.

4-2 To promote equitable distribution of benefits among FPC members

● FPC constitution

- Promote democratic election of management committees and chairperson of FPCs in order to avoid elite capture.

● Making decisions and rules

- Promote democratic participation of general members in making of implementation of decisions and rules. Special attention should be given to weaker sections (e.g. women, lower castes, and landless) to promote their actual participation.
- Apply flexible measures over forest uses (if necessary) according to their degree of dependence on forests for their livelihoods based on assessment of their needs for forests (e.g. lowering user fees for those who depend most on these resources).
- If some villagers are excluded from the JFM program, permit other villagers' use of forests on fee basis but the fee should be set at a reasonable level.

● Implementation of decisions and rules

- Promote accountability of chairpersons and MC to general members: it is important to include various members with different backgrounds (e.g. wealth, caste, gender and political affiliations) into local level processes, and ensure transparency by making information of minutes and accounts available to the general members.
- Promote uniform enforcement of the agreed measures and sanctions to be applied to everybody regardless of their background such as wealth, gender, caste, or political affiliations.
- Promote that revenues generated for FPCs would be used for a public purpose which benefits every member of the FPC (e.g. construction of schools).

4-3 To minimize negative consequences of the establishment of JFM villages over neighboring villagers

Forest boundary demarcation and allocation in particular in a forest scarce area is prone to a high risk of causing detrimental social and economic effects over villagers which are not included in the JFM program. In order to mitigate such damaging effects, the following actions should be considered:

- Conduct prior assessment of potential impacts of the boundary demarcation over local villagers. Particular attention should be given to areas subject to potential conflicts.
- Promote participation of local villagers in the boundary making processes in order to reflect their needs and to mitigate potential conflicts among villagers.
- Prepare additional measures to solve conflicts and problems which arise from the boundary making. Such measures may include:
 - Provide options for other non-JFM villages to participate in already existing FPCs.
 - Further divide forests to allocate to other excluded villages to participate in JFM.
 - Encourage already existing FPCs to let other villagers use their forest resources, if necessary, on fee basis (but such fees should be set at the reasonable level).

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Attachments

Attachment 1: List of informants for qualitative interviews

1. Khammam district

1-1 Village A

Name	FPC position or types	Gender	Date	Interview	Number
Villager 1	Former chairperson	M	July, 07	Individual	1
Villager 2	Current chairperson	F	July, 07	Individual	1
Villager 3	Present vice chairperson	M	July, 07	Group with FBO's presence	4
Villager 4	Brother of the above	M	July, 07		
Villager 5	FPC member	M	July, 07		
Villager 6	FPC member	M	July, 07		
Villager group 1	4 old ladies	F	Dec, 07	Individual	4
Villager group 2	General members	M, F	July, 07	Individual	25
Total					32

1-2 Village B

Name	FPC position or types	Gender	Date	Interview	Number
Villager 1	Chairperson	F	July, 07	Individual	1
Villager 2	Former ward member	M	July, 07	Individual	1
Villager 3	FPC member	M	Dec, 07	Individual	1
Villager 4	Village council leader		Dec, 07	Individual	1
Villager 4	FPC member	M	July, 07	Individual	1
Villager 6	Non FPC member	M	July, 07	Individual	1
Villager 7	FPC member	M	July, 07	Individual	1
Villager group 1	4 ladies	F	Dec, 07	Group	4
Total					11

1-3 Others

Name	Position or types	Date	Interview	Number
Forest Department officer 1	Forest Beat Officer	July, 07	Individual	1
Forest Department officer 2	Forest Range Officer	July, 07	Individual	1
A grass root NGO 1	President of ASDS	July, 07	Individual	1
A grass root NGO 2	Member of ASDS	July, 07	Individual	1
Translator 1	Translator	July, 07	Individual	1
Translator 2	Translator	July, 07	Individual	1
Enumerator 1	Enumerator	Dec, 07	Individual	1
Total				7

2. Medak district

2-1 Village C

Name	FPC position or types	Caste	Gender	Date	Interview	Number
Villager 1	1 st chairperson	OC	M	July, 07	Individual	1
Villager 2	2 nd chairperson	OC	M	July, 07	Individual	1
Villager 3	2 nd MC member	OC	F	July, 07	Individual	1
Villager 4	85 yrs Old person	?	M	July, 07	Individual	1
Villager 5	General member	BC	M	July, 07	Individual	1
Villager 6	2 nd MC member	BC	M	July, 07	Individual	1
Villager 7	1 st MC member	SC	F	July, 07	Individual	1
Villager 8	2 nd MC member	SC	M	July, 07	Individual	1
Villager 9	3 rd chairperson	SC	F	Jan, 08	Individual	1
Villager 10	3 rd chairperson's husband	SC	M	Jan, 08	Individual	1
Villager 11	Sarpanch (political leader of the village)	OC	M	Aug, 07	Individual	1
Villager group 1	Gate thanda	ST	M	July, 07	Group	10
Villager group 2	Kocheru thanda	ST	M, F	Aug, 07	Group	1
Villager group 3	Dharma thanda	ST	M, F	July, 07	Group	5
Villager group 4	Somla thanda	ST	M, F	July, 07	Group	10
Villager group 5	Mondi thanda	ST	M	July, 07	Group	5
Villager group 6	Sheep and goat rearers	2 SC 8 BC	M	July, 07	Group	10
Villager group 7	NTFP collectors	SC OC	F	Aug, 07	Group	4
Total						54

2-2 Village D

Name	FPC position	Caste	Gender	Date	Interview	Number
Villager 1	1 st chairperson Present Sarpanch (political leader of the village)	BC	M	Jan, 08	Individual	1
Villager 2	Former Sarpanch	BC	M	Jan, 08	Individual	1
Villager 3	Former Sarpanch up to 1998	BC	M	Jan, 08	Individual	1
Villager 4	Former MC member	BC	M	Jan, 08	Individual	1
Villager 5	Former MC member	BC	M	Jan, 08	Individual	1
Villager 6	General member	BC	M	Jan, 08	Individual	1
Villager 7	Genera member	ST	M	Jan, 08	Individual	1
Villager 8	General member		F	Jan, 08	Individual	1
Total						9

2-3 Village E

Name	FPC position	Caste	Gender	Date	Interview	Number
Villager group 1	Sheep and goat rearers	Mixed	M, F	July, 07	Group	12
Villager group 2	Chairperson and other	Mixed	M, F	Jan, 08	Group	6
Total						18

2-4 Village F

Name	Village position	Caste	Gender	Date	Interview	Number
Villager group 1	Group	Mixed	M, F	July, 07	Group	8
Village member 1	Sarpanch	Mixed	M, F	Jan, 08	Individual	1
Total						9

2-5 Others

Name	Type	Date	Interview	Number
Other FPC member	Previous FPC federation representative	Aug, 07	Individual	1
Forest Department officer 1	Forest Beat Officer	July, 07	Individual	1
Forest Department officer 2	Forest Range Officer	Aug, 07	Individual	1
Forest Department officer 3	Sub-divisional officer	Aug, 07	Individual	1
Forest Department officer 4	Divisional Forest Officer	Aug, 07	Individual	1
Forest Department officer 5	Chief Conservator of Forests	Aug, 07	Individual	1
Animal Husbandry Department officer	Animal doctor Animal Husbandry Department	Aug, 07	Individual	1
A grass root level NGO	Director of Seva Sangam	Jan, 08	Individual	1
A state level NGO	Director of CPF	Jan, 08	Individual	1
Research assistants	1	Jan, 08	Individual	1
	2	Jan, 08	Individual	1
	3	Jan, 08	Individual	1
	4	Jan, 08	Individual	1
	5	Jan, 08	Individual	1
Total				14

Attachment 2: Semi structured interviews for the Forest Protection Committee study

A. Background of village

- 1) Obtain micro plans of the case study FPCs
- 2) Conduct transect walk to gain understanding of locations of different settlements and livelihood activities
- 3) Conduct interviews with FPC chairperson/vice chairperson or/and village chief to collect background information including

1. Temperature and climate

1-1 How are climate and temperature each month?

	1	2	3	4	5	6	7	8	9	10	11	12
Temperatur												
Climate (rain/dry)												

2. Main livelihood activities

2-1 What are main livelihood activities (income sources) in your area?

2-1-1 Agriculture

2-1-2 Livestock

2-1-3 Forest related activities

2-2 What are main agricultural products? How are they used?

	Name	Domestic consumption	Sale	Others (further information) Should give some info on how and for what the products are used
Product 1				
Product 2				
Product 3				
Product 4				

2-3 When are seasons of these agricultural products? Write activities (cultivation, harvest, lean season) etc.

	1	2	3	4	5	6	7	8	9	10	11	12
Product 1												
Product 2												
Product 3												
Product 4												

2-4 What are main livestock in this area? For what purpose are they used?

2-5 What are main forest products in this area?

2-5-1 Can you list 3-5 most important NTFPs in this area?

2-5-2 For what purpose is each forest product used?

2-5-3 If you sell these products, where do you sell?

2-6 When are main seasons of forest related activities?

3. Forest characteristics

3-1 How many ha of forests does the FPC have?

(1) Is the forest area under control increased or decreased after the JFM program?

3-2 How far is the FPC forest?

3-2-1 Km?

(1) Did the distance to forests change after the JFM?

3-3 How much time does it take to reach there?

	<i>Time</i>
1. Walk	
2. Bicycle	
3. Bull car	
4. Truck/car	

3-4 What types of forests are they?

Land category	2. Total area (ha)	Ownership (ha)			
		3. State	4. Community	5. Private	5. Open access (de facto)
<i>Forest:</i>					
1. Natural forest					
2. Managed forests					
3. Plantations					

3-5 Can you describe how forests were managed before the JFM?

3-6 Can you describe how people use forests before the JFM?

3-7 What was condition of forests before the introduction of JFM?

3-8 If degraded, what are reasons for forest degradation?

3-8-1 Due to unscientific management

3-8-2 Hacking for firewood collection

3-8-3 Smuggling timber

3-8-4 Fire damage

3-8-5 Destruction of forests by Grazing

3-8-6 Encroachment of forests

3-8-7 Others, specify

3-9 Has the forest condition improved or degraded after the JFM?

3-9-1 How is forest condition defined by the different stakeholders?

3-9-2 What indicators do different stakeholders use when estimating the development in forest quality?

3-10 If improved, what are reasons for forest improvement?

3-10-1 Natural regeneration

3-10-2 Due to forest protection by the JFM

3-10-3 Others, specify

3-11 Were there similar types of forest user group before the government program introduced?

4. FPC characteristics

4-1 When was the FPC formed?

4-2 How many are in the General Body?

4-3 What are compositions of the GB body?

Gender

	Number	%
Male		
Female		
Total		

Caste

	Number	%
OC		
Backward caste (BC)		
Scheduled tribe (ST)		
Scheduled caste (SC)		
Total		

Land holding

	Number	%
Landless		
Small land holder (0-3ha)		
Middle land holder (3-5ha)		
Large land holder (>5 ha)		
Total		

Livelihood activities

	Number	%
Agriculture		
Livestock		
Forest related		
Others		
Total		

Land holding

Land holding types	Number	%
Landless		
Small land holder (0-3ha)		
Middle land holder (3-5ha)		
Large land holder (>5 ha)		
Total		

Livelihood activities

Main occupation	Number	%
Agriculture		
Livestock		
Forest related		
Others		
Total		

5. Micro plan

5-1 How frequent does the FPC have to prepare a micro plan?

5-2 How many days does it take to prepare a micro plan?

5-3 What are included in a micro plan?

6. Wages and prices

6-1 What is the typical daily wage rate for unskilled agricultural/casual adult **male/female** labour during the **peak/slack** season in this village over the past 12 months? (*Lc\$/day*)

	Male	Female
Peak	1.	2.
Slack	3.	4.

B. FPC management

1. Changes between before and after the JFM program

- 1-1 Can you describe how forests were managed before the JFM?
- 1-2 Can you describe how people used forests before the JFM?
- 1-3 Were there similar types of forest user group before the government program introduced?
- 1-4 If yes, how did you decide how to manage forests?
 - 1-4-1 Were there any meetings to decide to make a rule of how to manage forests before?
 - (1) If yes, who organized such a meeting?
 - (2) How many times a year were meetings held?
 - (3) How many hours did a meeting usually take?

2. The process of formalizing FPC forest boundaries

- 2-1 How was forest boundary created or defined?
 - 2-2 Who participated in defining the boundary?
- Other forest users**
- 2-3 Were there any other forest users who used the FPC forests before?
 - 2-3-1 Who are they?
 - 2-3-2 Were they involved in demarcating the boundary?
 - 2-3-3 Do they still use the forests?
 - 2-3-4 If not, where do they use instead?
 - 2-4 Are there any forest users within your forest boundary, who do not belong to your FPC?
 - 2-4-1 If so, who are they?
 - 2-4-2 Are they from your village?
 - 2-4-3 Are they from other villages?
 - 2-5 Were there any disputes over FPC forest boundary?
 - 2-5-1 If so, how were they resolved?

3. The process of institutionalizing FPC

- 3-1 How was the FPC formed?
 - 3-1-1 Local initiative
 - 3-1-2 Initiative from NGO
 - 3-1-3 Initiative from government (e.g. Forest Department)
 - 3-1-4 Others, please specify
- 3-2 What type of discussion and consultation process that let to the formation of FPC?
- 3-3 Who were the leading players at the formation stage and what role they had played in bringing the people together to form the FPC?
- 3-4 What are reasons of joining the JFM program?
 - 3-4-1 Better access to the forest, i.e., more use rights to village
 - 3-4-2 Better protection of forest (avoid overuse)
 - 3-4-3 Better skills and knowledge on how to collect/use it
 - 3-4-4 Better access to credit/capital and equipment/technology
 - 3-4-5 Better access to markets and reduced price risk
 - 3-4-6 Wage employment
 - 3-4-7 Forced to join by the government
 - 3-4-8 Other

4. General Body

- 4-1 Who are eligible for the FPC membership?
 - 4-1-1 Forest users in the village
 - 4-1-2 Anyone in the village
 - 4-1-3 Forest users within a given forest
 - 4-1-4 Other, please specify
- 4-2 How were members of the GB selected?
 - 4-2-1 Self selection
 - 4-2-2 Village council initiative
 - 4-2-3 FD initiative
 - 4-2-4 NGO imitative
 - 4-2-5 Panchayat initiative
 - 4-2-6 Others, please specify
- 4-3 Are there any cash payments /contribution that one has to make to a FPC?
 - 4-3-1 If so, how much?
- 4-4 Are there any changes in membership over time?
 - 4-4-1 If so why?
- 4-5 Were there any disputes over membership?
 - 4-5-1 If so, how were they resolved?
- 4-6 Were there any people who were rejected for membership?
 - 4-6-1 Who are they?
 - 4-6-2 Why?
- 4-7 Were there any people who refuse to join the FPC?
 - 4-7-1 Who are they?
 - 4-7-2 Why?
- 4-8 GB meeting
 - 4-8-1 How many times a year do you have a GB meeting?
 - 4-8-2 How long does a meeting usually take?
 - 4-8-3 What do you discuss at the GB meeting?
 - 4-8-4 Who usually participate in the meeting?

5. Management Committee (MC)

- 5-1 How were members of Management Committee selected?
 - 5-1-1 Self chosen
 - 5-1-2 Voting
 - 5-1-3 Informal consensus
 - 5-1-4 Others
- 5-2 How were chairperson and vice chairperson selected?
 - 5-2-1 Self chosen
 - 5-2-2 Voting
 - 5-2-3 Informal consensus
 - 5-2-4 Others
- 5-3 Have memberships of the MC changed?
 - 5-3-1 If so, why?
- 5-4 Have chairperson and vice presidents been changed?
 - 5-4-1 If so, why?
- 5-5 MC meeting
 - 5-5-1 How many times a year do you have a MC meeting?
 - 5-5-2 How long does a meeting usually take?
 - 5-5-3 What items do you discuss at the MC meeting?
 - 5-5-4 Who participate in the meeting?

- 5-5-5 How are MC decisions communicated to the village?
- 5-5-6 How are FPC accounts and records communicated to the FPC members including those who may be illiterate
- 5-5-7 How are FPC accounts audited and consolidated vis á vis the members and official authorities?

6. Advisory Committee (AC)

- 6-1 What are their roles in relations to forest management?
 - 6-1-1 Concerned forest section officer, forest beat officer or forest assistant beat officer
 - 6-1-2 Panchayat Sarpanch, representative of the village tribal development agency in schedule areas
 - 6-1-3 Village administrative officer
 - 6-1-4 Village school headmaster
 - 6-1-5 GCC
 - 6-1-6 NGOs
 - 6-1-7 Velugu
 - 6-1-8 Other
- 6-2 If they have any roles, how are they involved in FPC forest management?

7. Institutional arrangements

- 7-1 What are responsibilities of the FPC?
 - 7-1-1 Forest protection
 - 7-1-2 Prepare micro plans and annual plans
 - 7-1-3 Manage forests
 - 7-1-4 Apprehend offenders
- 7-2 Does FPC own forest lands?
- 7-3 Who have the following rights?
 - 7-3-1 to own fuelwood, fodder, forest foods, medicinal plants, timber, NTFPs
 - 7-3-2 to decide how to manage fuelwood, fodder, forest foods, medicinal plants, timber, NTFPs (# of extraction, protection etc)
 - 7-3-3 to harvest fuelwood, fodder, forest foods, medicinal plants, timber, NTFPs
 - 7-3-4 to transport and sell fuelwood, fodder, forest foods, medicinal plants, timber, NTFPs
- 7-4 Does FPC have obligations
 - 7-4-1 to describe each in a management plan?
 - (1) how to manage fuelwood, fodder, forest foods, medicinal plants, timber, NTFPs (# of extraction, protection etc)
 - 7-4-2 to obtain permits to
 - (1) harvest, transport and sale fuelwood, fodder, forest foods, medicinal plants, timber, NTFPs
 - 7-4-3 to pay fees for such permits?
 - (1) how long does it take for a permit to be issued by the government?
 - 7-4-4 to sell products to particular places?
 - (1) fuelwood, fodder, forest foods, medicinal plants, timber, NTFPs

8. Rule making and decision making within a micro plan

- 8-1 Who participate in making a micro plan?
- 8-2 Where is a micro plan usually prepared?
 - 8-2-1 At the GB meeting
 - 8-2-2 At the MC meeting
 - 8-2-3 Other
- 8-3 What kinds of rules are created related to forest activities?
 - 8-3-1 How do you decide these rules?
 - 8-3-2 Can FPC modify rules made under a micro plan?
 - 8-3-3 If so, how?

- 8-4 Were any restrictions posed on use of forests for
 - 8-4-1 Temporal closure of forests
 - 8-4-2 Fuelwood collection
 - 8-4-3 Fodder collection
 - 8-4-4 Grazing
 - 8-4-5 Medicinal plants collection
 - 8-4-6 Others
- 8-5 Are there any conflicts in making rules?
 - 8-5-1 How are these conflicts resolved?
- 8-6 What kinds of works should be done under a micro plan?
- 8-7 How does the FPC decide on and distribute works among members?
 - 8-7-1 Area treated (coppicing and singling)
 - 8-7-2 Wage per day
 - 8-7-3 No of persons
 - 8-7-4 No of days work
 - 8-7-5 No. of plants planted
 - 8-7-6 Expenditure
- 8-8 Are there any conflicts in distributing works?
- 8-9 How often and according to which procedures are micro plans revised?
 - 8-9-1 Who has authority to modify the micro plan
 - 8-9-2 How does this take place in practice?

9. Implementation of a micro plan

- 9-1 How is each work implemented?
 - 9-1-1 Plant nursery
 - 9-1-2 Planting trees
 - 9-1-3 Coppicing
 - 9-1-4 Singling
 - 9-1-5 Thinning
 - 9-1-6 Soil conservation (e.g. stabilize slope)
 - 9-1-7 Fire management (e.g. remove combustible materials)
 - 9-1-8 Forest patrolling to capture forest offence
 - 9-1-9 Others
- 9-2 How does the FPC make sure each work to be implemented according to a micro plan?
- 9-3 Has anyone in the village been violating the rules of the FPC over the past 12 months?
 - 9-3-1 If yes, what kinds of violations are they?
- 9-4 Which group of forest users have most commonly violating the rules?
 - 9-4-1 Members of FPC
 - 9-4-2 Non FPC members in the village
 - 9-4-3 People from other villages
 - 9-4-4 Other, specify
- 9-5 In case of violations, can the FPC impose any penalties on those violating the rules?
 - 9-5-1 If yes, what types of penalties?
 - 9-5-2 Fee
 - 9-5-3 Returning collected products
 - 9-5-4 Labor (extra work)
 - 9-5-5 Exclusion from the group
 - 9-5-6 Other, specify
 - 9-5-7 If not FPC, who can impose penalties?
- 9-6 Are there any conflicts in distributing works?
 - 9-6-1 How are these conflicts resolved?

10. FPC revenue management and distribution

- 10-1 What are sources of FPC revenue?
- 10-2 How much revenue per year is generated from the following to the FPC?
 - 10-2-1 Fuelwood
 - 10-2-2 Timber
 - 10-2-3 Wage paid by government
 - 10-2-4 Compounding fee
 - 10-2-5 Others
- 10-3 Who are in charge of managing joint account funds received from the government?
- 10-4 Who are in charge of managing FPC account funds received from other Non – Government sources?
- 10-5 How are revenue shared between the forest department and FPC?
- 10-6 How revenues are distributed among FPC members?
- 10-7 Are there any records of revenue distribution?
- 10-8 Are there any conflicts in distributing benefits?
 - 10-8-1 How are these conflicts resolved?

11. Maintaining records

- 11-1 Who are in charge of minutes book to record all the transaction
 - 11-1-1 Is it available to all the members?
- 11-2 Who are in charge of resolution book? (Joint account book)
 - 11-2-1 Is it available to all the members?
- 11-3 Who are in charge of passbook (FPC account book)
 - 11-3-1 Is it available to all the members?
- 11-4 Who are in charge of muster book (work attendance book): how many days of work
 - 11-4-1 Is it available to all the members?

Attachment 3: Questionnaire surveys

A. Identification

1.Name of village	2. Name of the person (please write the name in English below)	3. Name of household head (please write the name in English below)	4. Sex (0=male 1=female)	5. Education (number of years completed)	6. Caste (OC, BC, SC, ST)	7. Total land owned (forest, agriculture, fallow) in acres
8.Which political party do you support?			1. Congress			
			2. TRS			
			3. CPI			
			4. TPP			
			5. Other, please specify			
9.What is the wall of household made of ?			1. Bamboo			
			2. Tree poles			
			3. Cement			
			4. Brick			
			5. Mud			
			6. Other, please specify			
10.What is the roof of household made of ?			1. Tree poles			
			2. Palm tree leaves			
			3. Brick			
			4. Cement			
			5. Other, please specify			

B. Livelihood activities

1. What are the most important livelihood activities? <i>please rank 1-4 : 1 is most important</i>	1. Agriculture	
	2. Livestock	
	3. Forest related activities (collection and sale of timber and NTFPs)	
	4. Wage employment	
2. How many acres of lands does your household have?	1. Paddy	
	2. Maize	
	3. Sugarcane	
	4. Grand nuts	
	5. Other, specify	
3. How many of the assets does your household own?	1. Bicycle	
	2. Car	
	3. Motorbike	
	4. TV	
4. How many livestock does your household own?	1. Cattle	
	2. Buffalos	
	3. Sheep	
	4. Goats	
	5. Pigs	

C. Forest Resource Base

1. How far is it from the house/homestead to the edge of the nearest FPC forest that you have access to and can use?	1. ... measured in terms of distance (straight line)?	<i>Km</i>
	2. ... measured in terms of time (in minutes of walking)?	<i>Min</i>
2. Do you collect fuelwood ? <i>If yes, 1 if no 0</i>		<i>(1-0)</i>
3. If 'yes' : how many hours per week do you spend on collecting fuelwood?		<i>(hours)</i>
4. How has availability of fuelwood changed after the FPC introduction? <i>Codes: 1=declined; 2=about the same; 3=increased</i>		
5. Do you graze sheep or goats in forests ?		<i>(1-0)</i>
6. How has availability of fodder for these animals changed after the FPC introduction? <i>Codes: 1=declined; 2=about the same; 3=increased</i>		
7. Do you collect Gum ?		<i>(1-0)</i>
8. How has availability of Gum changed after the FPC introduction? <i>Codes: 1=declined; 2=about the same; 3=increased</i>		
9. Do you collect adda leaf ?		<i>(1-0)</i>
10. How has availability of adda leaf changed after the FPC introduction? <i>Codes: 1=declined; 2=about the same; 3=increased</i>		
11. Do you collect beedi leaf ?		<i>(1-0)</i>
12. How has availability of beedi leaf changed after the FPC introduction? <i>Codes: 1=declined; 2=about the same; 3=increased</i>		
13. Do you collect bloom stick grasses ?		<i>(1-0)</i>
14. How has availability of bloom stick grasses changed after the FPC introduction? <i>Codes: 1=declined; 2=about the same; 3=increased</i>		
15. Do you collect mafua ?		<i>(1-0)</i>
16. How has availability of mafua changed after the FPC introduction? <i>Codes: 1=declined; 2=about the same; 3=increased</i>		
17. Do you collect tree poles ?		<i>(1-0)</i>
18. How has availability of tree poles changed after the FPC introduction? <i>Codes: 1=declined; 2=about the same; 3=increased</i>		
19. Overall, how would you say the existence of the FPC has affected the forest condition? <i>Codes: 1=large negative effect; 2=small negative effect; 3=no effect; 4=small positive effect; 5=large positive effect.</i>		

D. Forest Protection Committees

1. What are your reasons for joining the FPC? <i>Please rank the most important reasons, max 3.</i>	1. Increased access to forest products	
	2. Regenerate forests for the future generation	
	3. Wage employment opportunities	
	4. Being respected and regarded as a responsible person in a village	
	5. Social aspect (meeting people, working together, fear of exclusion, etc.)	
	6. Forced by forest department	
	7. Forest department promised to provide us with some benefits (e.g. house utensils and a community tent house)	
	8. I do not know that I belong to the FPC	
	9. Other, specify	
2. Overall, how would you say the existence of the FPC has affected the benefits that you get from the forest? <i>Codes: 1=large negative effect; 2=small negative effect; 3=no effect; 4=small positive effect; 5=large positive effect.</i>		
3. How many person days (= full working days) did you spend in total on FPC activities (meetings, policing, joint work, etc) during the past 12 months?		
4. Do you normally/regularly attend the General Body (GB) meetings?		<i>Days</i>
5. If you attend participate in GB meetings, how?	1. Just to be present at meetings without saying anything	
	2. Being asked an opinion in specific matters without guarantees of influencing decisions	
	3. Expressing opinions, whether or not solicited, or taking initiatives of other sorts	
	4. Having voice and influence in the group's decisions	
	5. Being asked to (or volunteering o) undertake specific tasks	
6. If you don't participate in GB meetings, why? <i>Please rank the most important reasons, max 3</i>	Reason	Rank 1-3
	1. I do not know about the FPC	
	2. I have more important works to do (e.g. agriculture)	
	3. I don't believe FPC is very effective in managing forest	
	4. Not interested in the activities undertaken by FPC	
	5. FPC is corrupted	
	6. FPC does not bring me any benefits	
	7. FPC is influenced by a particular group of people (ethnic, political party, religion, age, etc.) than I do	
	8. FPC membership will restrict my use of the forest, and I want to use the forest as I need it	
	9. Presence of forest authorities	
10. Other, specify:		
7. Have you participated in making a micro plan?		
8. Do you agree with choices of	1. Soil moisture conservation activities (check dams, PT (percolation tank)	
	2. Forest management (e.g. thinning, coppicing)	
	3. Tree species for plantation	
9. Have you participated in deciding how to protect forests (e.g. employment of forest guards)?		
10. Do you agree with forest protection activities for	1. Employment of forest guards	
	2. Other, please specify	
11. Have you participated in making internal rules for fuelwood, grazing and tree poles?		
12. Do you agree with rules for	1. Collection of fuelwood (not collect wet fuelwood)	
	2. Grazing (not cut branches)	
	3. Collection of tree poles	
	4. Forest encroachment	
	5. Other, please specify	
13. Have you caught forest offenders?		

14. If so, who are they?	1. Own villagers	
	2. Outside villagers	
	3. Organized smuggler groups from outside	
	4. Government authorities	
	5. Other, please specify	
15. Have you ever been caught by the FPC members for committing forest offences?		
16. If so, how were you punished?	1. Confiscation of materials	
	2. Payment of fines	
	3. Exclusion from the FPC	
	4. Extra volunteering work assignment	
	5. Other, please specify	
17. Was the punishment in accordance with the rules?		
18. Do you know how FPC revenues are used?		
19. If so, do you agree with how the FPC revenue has been used?		
20. Are you aware of the contents of the following documents?	1. Micro plan	
	2. Minutes	
	3. FPC account book	

About author

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