



ZEF Bonn
Zentrum für Entwicklungsforschung
Center for Development Research
Universität Bonn

Appukkuttannair Damodaran, Stefanie Engel

Joint Forest Management in India:

Number

77

Assessment of Performance and
Evaluation of Impacts

ZEF – Discussion Papers on Development Policy
Bonn, October 2003

The CENTER FOR DEVELOPMENT RESEARCH (ZEF) was established in 1995 as an international, interdisciplinary research institute at the University of Bonn. Research and teaching at ZEF aims to contribute to resolving political, economic and ecological development problems. ZEF closely cooperates with national and international partners in research and development organizations. For information, see: <http://www.zef.de>.

ZEF – DISCUSSION PAPERS ON DEVELOPMENT POLICY are intended to stimulate discussion among researchers, practitioners and policy makers on current and emerging development issues. Each paper has been exposed to an internal discussion within the Center for Development Research (ZEF) and an external review. The papers mostly reflect work in progress.

Appukkuttannair Damodaran, Stefanie Engel: Joint Forest Management in India: Assessment of Performance and Evaluation of Impacts, ZEF – Discussion Papers on Development Policy No. 77, Center for Development Research, Bonn, October 2003, pp. 44.

ISSN: 1436-9931

Published by:

Zentrum für Entwicklungsforschung (ZEF)

Center for Development Research

Walter-Flex-Strasse 3

D – 53113 Bonn

Germany

Phone: +49-228-73-1861

Fax: +49-228-73-1869

E-Mail: zef@uni-bonn.de

<http://www.zef.de>

The authors:

Appukkuttannair Damodaran, Professor of Economics, Trade and Environment, Indian Institute of Plantation Management Bangalore, India (contact: ad_iipm@vsnl.net)

Stefanie Engel, Research Fellow, Center for Development Research, University of Bonn, Germany (contact: st.kirchhoff@uni-bonn.de)

Joint Forest Management in India: Assessment of Performance and Evaluation of Impacts

Contents

Acknowledgements

Abstract	1
Kurzfassung	3
1 Evolution and Structure of JFM	5
1.1 Origins and Evolution of JFM	5
1.2 JFM Defined	8
1.3 Scope of JFM	8
1.4 Structures of JFM	8
1.5 Powers of Forest Protection Committees	9
1.6 Analysis of JFM-Related Policy Changes	9
2 Evaluation of Progress	11
2.1 Spread of JFM	11
2.2 Inter-State Variations in Spread of JFM	13
2.3 Inter-State Variations in Implementation of JFM	14
3 Analysis of Implementation Problems and Differences	15
3.1 Diagnosis of the Causes for Poor Performance of JFM	15
3.2 Externally Aided Projects as the Context of JFM	15
3.3 Evaluation Criteria and Factors Conducive to Success of JFM	17

4	Recent Policy Changes	19
4.1	The February 2000 Guidelines	19
4.2	The December 2002 Guidelines	21
4.3	Changes at the Macro Level	21
5	The PEER Approach to JFM Analysis	23
5.1	Specifics of the PEER Approach	23
5.2	The Philosophical Approach to JFM Policies and the Future Scenario	25
5.2.1	Center versus State Philosophy	25
5.2.2	Sub-National Policy Intents as Causes of Inter-State Variations	28
5.3	The Efficiency Dimension	28
5.4	The Effectiveness Dimension	29
5.5	The Ramification Dimension	30
6	Conclusions	32
	References	33
	Appendix	36

List of Acronyms

FD	Forest Department
FDA	Forest Development Agency
FPC	Forest Protection Committee
JFM	Joint Forest Management
JFMC	Joint Forest Management Committee
MoEF	Ministry of Environment and Forests
MoU	Memorandum of Understanding
NADB	National Afforestation Development Board
NTFP	Non-timber forest produce
NWDB	National Wasteland Development Board
PRA	Participatory Rural Appraisal
RUPFOR	Resource Unit for Participatory Forestry
VA	Village Association
VFC	Village Forest Committee

List of Tables

Table 1:	Area Covered under Joint Forest Management in India (2000)	11
Table 2:	Area Covered under Joint Forest Management in India (2002)	12
Table 3:	Financial Assistance Received from External Donor Agencies for JFM	16
Table A.1:	Inter-State Differences in JFM for Selected States in India	37

List of Figures

Figure 1:	The “PEER” Scheme	24
-----------	-------------------	----

Acknowledgements

The authors acknowledge the comments received from Dr. Madhav Karki of the International Development Research Centre and Dr. Puja Sawhney (ZEF) on an earlier draft.

Abstract

This paper is an attempt to critically survey the movement for Joint Forest Management (JFM) in India. The study commences with a description of the policy context in which Joint Forest Management got initiated in India. It considers the 1980s to have effected a paradigm shift in India's forest policy and legislations. The passage of the Forest Conservation Act in 1980 was followed by a host of measures to unleash a forest conservation movement in India based on local community support. The National Forest Policy of 1988 marked the first effort to set the pace for community participation in forest management. In June 1990, the Government of India issued a circular to give effect to the provisions of the National Forest Policy 1988 in this regard. Joint Forest Management was thus born in India. By the year 2002, JFM covered 140,953 sq kilometers of forest area, which was distributed amongst 63,618 Forest Protection Committees (FPCs) in different States. This was a major achievement, considering the fact that forest management in India has, since 1878, been a bureaucratically driven process. The first chapter also describes the main features of JFM.

However, as the paper proceeds to state in *Chapter 2*, the spread of JFM in India has been uneven in scope and structure. In most of the States, JFM has not even covered degraded forests in their entirety. Nomenclatures and the governing structures of JFM vary from State to State. Indeed, in most States, Forest Protection Committees do not enjoy any legal status and in very many cases they are liable to be disbanded by the Forest Department. Similarly very few FPCs are given primary powers both in terms of rights to frame rules and management plans and exercise of executive and legal functions. These powers continue to be vested with the forest department in a large number of cases. The chapter also assesses the performance of different States in regard to JFM. It adopts the criteria of spatial spread, delegation of powers, and "empowerment" for evaluating the performance of JFM in different States. Where available, field level information regarding the actual functioning of JFM is also adduced to support findings. The chapter notes JFM to be successful in the States of Andhra Pradesh, Haryana, Madhya Pradesh and West Bengal. It further notes that the new States of Jharkhand, Chattisgarh and Uttaranchal have exhibited a keen commitment to JFM, reckoned in terms of forest areas brought under the system in these States.

Chapter 3 of the paper provides a diagnosis for the poor performance of JFM. The chapter states that the poor performance of JFM in different areas has also been on account of insufficient "empowerment" and undesirable regulations. Moreover, in many cases JFM has been spurred through externally aided projects.

Chapter 4 surveys the principal policy changes that have been brought about more recently (2000-2003), in response to observed problems. The chapter notes the significant strides made by the Government of India to strengthen JFM policies in different States through these policy changes. Providing legal status to Forest Protection Committees, establishing a monitoring cell at the Central Government level, extending JFM to good forest areas and establishing forest development agencies to directly channel funds to the FPCs, have formed the features of policy change in recent times.

Chapter 5 advances the methodology of ‘PEER’ for assessing the functioning and impacts of JFM in India. The chapter states that in the case of JFM, the ‘P’ element of PEER, which stands for ‘philosophy’ and ‘policy-intent’, provides the foundation for the ‘EER’ (‘efficiency’ ‘effectiveness’ and ‘ramification’) elements. Unfortunately, existing assessments of the JFM implementation process have—by confining their attention to the ‘EER’ elements—lost sight of the ‘policy intent’ element. The chapter discusses the significance of approaching JFM from a ‘philosophical’ or ‘policy intent’ angle. Conflicts between the objectives of the national and State governments as well as sub-national policy intents can contribute much to understanding the causes of observed inter-State differences in performance. The chapter also mentions the evolving debate regarding corporatization of forest management. It notes that in the context of the economic liberalization process in India, the key philosophical issue before policy is the reconciliation of communitarian ideals with privatization programs underlying the process of economic reforms. The chapter marshals field-level evidence to draw inferences regarding the ‘efficiency’, ‘effectiveness’ and ‘ramifications’ dimensions of JFM in India.

Finally, the paper concludes by summarizing the discussions regarding the policy trajectory and politics of JFM in India.

Kurzfassung

Diese Arbeit ist ein Versuch, die Joint Forest Management (JFM) Bewegung in Indien kritisch zu beleuchten. Die Arbeit beginnt mit einer Beschreibung der politischen Rahmenbedingungen, unter denen JFM initiiert wurde. Die Arbeit geht davon aus, dass die 1980er Jahre einen Paradigmenwechsel für die Forstwirtschaftspolitik und -gesetzgebung Indiens mit sich brachten. Dem Erlass des *Forest Conservation Act* im Jahre 1980 folgten eine Reihe von Maßnahmen zur Freisetzung einer Waldschutzbewegung, basierend auf der Unterstützung lokaler Gemeinden. Die *National Forest Policy* von 1988 stellte die ersten konkreten Bemühungen dar, die Voraussetzungen für die Beteiligung der lokalen Gemeinschaften an der Forstverwaltung zu schaffen. Im Juni 1990 gab die indische Regierung einen Rundbrief zur Umsetzung der *National Forest Policy* von 1988 heraus. So wurde das *Joint Forest Management* in Indien geboren. Im Jahre 2002 deckte JFM 140.952 Quadratkilometer Waldgebiet ab, das unter 63.618 *Forest Protection Committees (FPCs)* in verschiedenen Bundesstaaten aufgeteilt war. Dies war eine bedeutende Errungenschaft, wenn man bedenkt, dass Forstverwaltung in Indien seit 1878 ein bürokratisch bestimmter Prozess gewesen war. Das erste Kapitel dieser Studie beschreibt auch die wesentlichen Elemente von JFM.

Wie jedoch in *Kapitel 2* dargelegt wird, war die Ausweitung von JFM in Indien ungleich in Ausmaß und Struktur. In den meisten Bundesstaaten deckte JFM nicht einmal die degenerierten Waldgebiete in ihrer Gesamtheit ab. Nomenklaturen und übergeordnete Strukturen des JFM variierten zudem von Staat zu Staat. In der Tat haben die *Forest Protection Committees (FPCs)* in den meisten Staaten keinen legalen Status. Damit einhergehend haben nur sehr wenige FPCs primäre Bestimmungsrechte erhalten, sowohl was das Recht angeht, die Regeln und Verwaltungspläne zu gestalten, als auch die exekutiven und legalen Funktionen betreffend. Diese Rechte liegen in einer Vielzahl der Fälle nach wie vor bei der Forstverwaltung. Das Kapitel evaluiert den Umsetzungsgrad von JFM in verschiedenen Bundesstaaten. Dabei werden die Kriterien von räumlicher Ausdehnung, Delegation von Rechten und "empowerment" angewendet. Soweit verfügbar, wird die Evaluierung durch Feldforschungsergebnisse ergänzt. Die Analyse zeigt, dass JFM vor allem in den Bundesstaaten Andhra Pradesh, Haryana, Madhya Pradesh und Westbengalen erfolgreich war. Weiterhin wird festgestellt, dass die neuen Staaten Jharkand, Chattisgarh und Uttaranchal eine starke Selbstverpflichtung zum JFM an den Tag legten, wie nach der Menge der Waldgebiete, die in das System einbezogen wurden, vermutet werden kann.

Kapitel 3 der Arbeit liefert eine Diagnose der schwachen Umsetzung von JFM. In dem Kapitel wird festgestellt, dass die unzureichende Durchführung von JFM in verschiedenen Gebieten auch wegen unzureichendem "empowerment" und nicht wünschenswerten

Vorschriften zustande kam. Darüber hinaus wurde JFM in vielen Fällen durch extern unterstützte Projekte angespornt.

Kapitel 4 untersucht die grundsätzlichen Strategieänderungen, die in jüngster Zeit (2000-2003) als Antwort auf die beobachteten Probleme herbeigeführt wurden. Das Kapitel stellt die signifikanten Schritte fest, welche die Regierung von Indien unternommen hat, um JFM-Programme in verschiedenen Staaten zu stärken. Das Zugestehen eines legalen Status an die FPCs, die Einrichtung einer Überwachungseinheit auf Ebene der Zentralregierung, die Ausweitung von JFM auch auf nicht-degradierte Waldgebiete und die Schaffung von sog. „Waldentwicklungsagenturen“ (*forest development agencies*) für den direkten Transfer von Geldmitteln an die FPCs, haben den Charakter der Strategieänderung in jüngster Zeit bestimmt.

Kapitel 5 entwickelt die sog. „PEER“ Methodologie für die Untersuchung der Ergebnisse und Effektivität von JFM in Indien. Es wird argumentiert, dass im Falle von JFM das „P“-Element von PEER, das für Philosophie und politische Intention steht, das Fundament der übrigen Elemente („Effizienz“, „Effektivität“, und „Auswirkungen (*Ramification*)“) darstellt. Dies wurde durch die ausschließliche Betrachtung letzterer Elemente in bisherigen Studien aus den Augen verloren. In diesem Kapitel wird die Signifikanz einer Betrachtung von JFM aus der Perspektive der philosophischen oder politischen Intention diskutiert. Konflikte zwischen den Zielsetzungen der nationalen Regierung und denen der Bundesstaaten sowie auch sub-nationalen politischen Intentionen können viel zum Verständnis der Ursachen der beobachteten zwischenstaatlichen Unterschiede in der Durchführung beitragen. Es wird auch die sich derzeit entwickelnde Debatte über die Vergesellschaftlichung der Forstverwaltung angesprochen. In dem Kapitel wird festgestellt, dass – im Kontext des wirtschaftlichen Liberalisierungsprozesses in Indien – die Abstimmung Gemeinde-basierter Ansätze mit Privatisierungsprogrammen, welche den ökonomischen Reformen zugrunde liegen, eine wesentliche philosophische Herausforderung darstellt. Abschließend werden in dem Kapitel Ergebnisse bestehender Feldforschungen bezüglich der Dimensionen von Effizienz, Effektivität und Auswirkungen von JFM in Indien präsentiert.

Die Arbeit schließt mit einer Zusammenfassung der Diskussion über den Ablauf und derzeitigen Stand der JFM-Politik in Indien.

1 Evolution and Structure of JFM

1.1 Origins and Evolution of JFM

To understand the concept and process of Joint Forest Management (JFM) in India one needs to delve into the evolution of the forest policy and legislations in the country. Though the initial set of policies and laws on forestry date back to the colonial period and the immediate post-independence period, one notices a paradigm shift in India's forest policy and legislations in the 1980s, with the passage of the Forest (Conservation) Act 1980. This Act highlighted the primacy of conservation of forests over the previous emphasis on utilizing 'forests' for meeting the requirements of agriculture and industry.

The first forest policy of India was enacted during the British period in 1894. This policy was centrally influenced by the Volcker Commission Report, which posited forests to be a biomass provider for the agricultural sector. After independence, the Government of India enacted a new forest policy in the year 1952 that, while largely subscribing to the philosophy of the 1894 policy, nevertheless highlighted the functional classification of forests. The 1952 policy classified forests into protection forests, national forests, village forests and tree lands. The policy recommended weaning of tribes from shifting cultivation practices and controlling of grazing and other activities in forest areas. Functional classification presupposed that forests had to be typified in terms of their relative ability to subserve agricultural and industrial systems in India. Accordingly, forests in hilly regions had to be preserved and protected on account of their possible role in preventing soil erosion and water runoff from agricultural catchments. Forests that had the potential for timber and related raw materials required for the industry were to be exploited on the basis of 'scientific working plans' to yield raw materials. Meanwhile, in 1973, the National Commission on Agriculture came up with the idea of production forestry based on 'high productivity' man-made plantations. A string of forest development corporations was accordingly set up in the late 1970s to 'corporatize' the process of production forestry in India (Damodaran, 2002). This development was in consonance with the prescriptions of the National Forest Policy 1952.

In the late 1970s, the Government of India and the State Governments initiated the social forestry movement with a view to carrying out tree planting in and around village areas. This was ostensibly designed to meet the growing demand for firewood and small wood required by the local communities. It was also in line with the thinking implicit in the National Forest Policy of 1952.

In the middle and late 1970s, the spread of the 'Chipko' movement in the U. P. hills led to a situation where the accepted tenets of the 1952 National Forest Policy were questioned by the environmental movements in the country.¹ The adverse consequences of large-scale diversion of forestlands to non-forestry purposes (which hit an astounding rate of 150,000 hectares per year prior to the 1980s), were too glaring to be ignored by the policy makers (Damodaran, 1992). Accordingly, the Forest Conservation Act of 1980 was enacted by the Government of India to check diversion of forestlands for non-forestry purposes. This act made it obligatory for State Governments to seek prior approval of the Central Government for undertaking diversion of forestlands for non-forestry purposes. Meanwhile, in pursuance of the 1972 Wildlife (Protection) Act, the Government of India set up an extensive network of protected areas in the country. By the end of the 1980s, protected areas accounted for 13.6 million hectares with the constitution of nearly 70 national parks and 411 wildlife sanctuaries in different parts of the country.

The other major development was the growing protest against forest plantations in different parts of the country. The movement against Eucalyptus plantations in the early 1980s raised serious questions about the ecological desirability of raising industry-oriented monoculture tree plantations in Indian forest areas. The key issue was how to resolve the growing biomass shortage for agriculture. As mentioned earlier the Social Forestry Programme initiated in mid-1970s had aimed to raise fuel wood and biomass generating plantations in non-forest lands. But its track record of the program was dismal. Further the program suffered for want of the participatory element.

These concerns caused the Government of India and the States to shift their policy towards a massive afforestation program in the wastelands of the country, which were estimated to be of the order of 175 million hectares. The National Wasteland Development Board (NWDB) was set up in the year 1985 to promote the afforestation process in community and private lands, with the involvement of stakeholders. The NWDB schemes included establishment of rural fuel wood plantations, treatment of micro-watersheds in Himalayan States, promotion of tree growers' cooperatives, establishment of people's nurseries and farm forestry activities. In due course, afforestation programs of the NWDB were restructured to cover degraded forestlands as well.

¹ 'Chipko', the grassroot environment movement spearheaded by Sri. Sundarlal Bahuguna and Sri. Chandi Prasad Bhatt was launched in the Central Himalayas in the early seventies for the protection of the mountain ecosystems, especially the forests. This movement resulted in a moratorium on felling of trees above 1000 meters altitude and 30° slopes for commercial purposes in an area of about 40,000 sq. kms. in the eight hill districts of Uttar Pradesh. The movement acquired national and international acclaim and was the guiding force behind the Forest Conservation Act of 1980 (Bahuguna, Sunderlal (1986): *The Chipko Message*, Chipko Information Center, Tehri-Garhwal, India).

Joint Forest Management in India: Assessment of Performance and Evaluation of Impacts

Despite these initiatives, the trend of depletion of forest cover in India continued unabated. Working plans were not successful in conserving forests. The Forest Survey of India came up with the finding that only in 15 per cent of the forest area covered by working plans adequate regeneration was noticed. Fire and grazing were held to be the culprits in this regard. Further, it was noted that in over 60 per cent of the area covered by the Working Plans, the annual cut exceeded the increment on account of unauthorized felling (Government of India, 1991). Between 1983 and 1987, the country lost forest cover at the rate of 47500 hectares per annum (ibid). However, these developments were not without their exceptions. The success of two community-driven “greening” movements in India opened the eyes of the policy makers to the immense potential afforded by people’s participation in the management of forests. The first one was a community-based forest conservation movement initiated in Araberi in Midnapur District of West Bengal State during 1971-72, while the second one was a grassroots movement in the Sukhomajri village in Haryana in the 1980s, to rejuvenate forests and agricultural systems in the village. In Araberi, the movement was triggered by a Silviculturalist of the State Forest Department, who by offering incentives to local communities induced them to protect and regenerate degraded Sal forests. The local communities, which were organized into ‘forest protection committees’ (FPCs), successfully protected the degraded forests from illegal felling, overgrazing, fire, and encroachment. In Sukhomajri, in Haryana State, the movement started from amongst the people. Construction of earthen dams stabilized agricultural output in the village. Forests in and around Sukhomajri village regenerated as a result. The regenerated forests in turn provided valuable biomass, including bhabar grass to local communities.

These instances awakened the policy makers at the Central Government to the need to go beyond the legalistic “Forest Conservation Act 1980”. Institutional measures for arresting the alarming trend of forest depletion in the country were actively considered. The National Forest Policy 1988 was accordingly enacted by the Government of India with a strong focus on conservation, environmental stability and ecological balance through association of tribals and local communities in protection, regeneration and development of forests. In pursuance of the National Forest Policy of 1988, the Government of India issued a ‘circular’ in June 1990 for involvement of village communities and village associations (VAs) in the regeneration of degraded forest lands. This marked the birth of the Joint Forest Management (JFM) movement in India.

Events generated by the 1990 circular forced the pace for the formation of the National Afforestation and Eco-Development Board (NAEB) in the year 1993, which was given the mandate of focusing its activities on degraded forest lands. The NWDB focused on its original mandate i.e., afforestation of community and non-forest wastelands. Subsequently while the NAEB functioned under the Ministry of Environment and Forests, the NWDB was shifted to the Ministry of Rural Areas and Employment.

1.2 JFM Defined

Scholars and policy makers have defined Joint Forest Management (JFM) in different ways. One source defines JFM as ‘a concept of developing partnerships between fringe forest user groups and the Forest Department (FD) on the basis of mutual trust and jointly defined roles and responsibilities for forest protection and development’ (Anonymous, 2001). The other definition of JFM runs as follows: ‘JFM is a forest management strategy under which the government (represented by the Forest Department) and the village community enter into an agreement to jointly protect and manage forestlands adjoining villages and to share responsibilities and benefits’ (Government of India, 2002).

1.3 Scope of JFM

The scope of joint forest management has been largely confined to degraded forest areas, though in certain cases such as Haryana, Madhya Pradesh and West Bengal, non-degraded forestlands have also been covered under the JFM.

1.4 Structures of JFM

Until recently, Forest Protection Committees were by and large not legal bodies as they were not recognized or registered under the Societies Registration Act or through related, enabling legislations. However, States such as Gujarat, Karnataka and Rajasthan had provided for registration of FPCs under the Cooperative Societies Act in the early stages itself (Murali, K.S. et al, 2000).

Structures and nomenclatures of JFM have varied from State to State. In general, one can delineate the following structure for JFM. The base of the JFM structure, which comprises village level institutions, is referred to as “forest protection committees”. These bodies include a “General Body” and a “core”, “Executive” or “Management Committee (MC)” elected by the General Body for discharging the assigned functions. The General Body comprises eligible members of the village. The eligibility criteria for membership vary from State to State. In most States, adults are eligible for joining the General Body. The General Body elects the local community representatives in the Executive Committee. The Executive Committee has elected members ranging in numbers from 5 to 15. It also includes ex-officio, non-elected members drawn from the Forest Departments, local NGOs, village schools, village administrative and development officers and in some cases representatives of the Gram or Mandal Panchayats. The States of Bihar, Himachal Pradesh, Karnataka, Jammu and Kashmir, Kerala, Madhya Pradesh and Punjab give representation for underprivileged communities and castes and women in the

Joint Forest Management in India: Assessment of Performance and Evaluation of Impacts

Executive Committee (ibid). Andhra Pradesh has moved towards compulsory 30 % representation for women in the Executive Committee (ibid). The States of Gujarat, Jammu and Kashmir, Karnataka and Madhya Pradesh require inclusion of two women representatives in the Executive Committee and provide for both 'husband' and 'wife' from a given household to be members of a General Body. The term of the Executive Committee is generally for two years in most of the States. However, in Arunchal Pradesh, Jammu and Kashmir, Madhya Pradesh, Maharashtra, Tripura and West Bengal, the tenure is one year. In Karnataka, Nagaland and Tamil Nadu, the tenure of the Executive Committee is five years (ibid). The Executive Committee undertakes decision-making, planning and implementation of management plans.

1.5 Powers of Forest Protection Committees

The functioning of FPCs in the post-1990 phase indicate that there are widespread inter-State differences, when it comes to grant of execution of powers by Forest Protection Committees. Different States give different flexibilities to FPCs in the matter of administrative, executive and financial powers. Nevertheless, the standard parameters of power granted to forest protection committees can be broadly categorized as under:

- Framing of rules governing management of forests
- Administrative powers for convening meetings of General Body and Management Committee meetings
- Voting rights in Management / Executive Committees
- Punitive powers – i.e., powers for punishing and imposing fines on offenders
- Rights to collect specific resources and sell them
- Distribution of benefits arising from conservation and regeneration
- Cancellation of membership of recalcitrant members
- Financial powers – to incur expenses, maintain accounts.

1.6 Analysis of JFM-Related Policy Changes

Forest policies and legislations in India have followed a top-down approach both in the colonial and the post-independence periods. In the colonial period, the British State formulated and framed polices and law in forestry; in the post-independence period, major initiatives in forestry were taken by the Union or Central Government. The Government of India framed the National Forest Policy 1952. State Governments were required to follow the policy. Similarly, the accent on production forestry, which obtained in the 1960s and early 1970s, was also driven by the Central Government. It was once again the Central Government, which enacted the Forest

Conservation Act 1980 and introduced the National Forest Policy 1988 and the JFM Circular of 1990. To a large extent, the top-down approach to forest policies and legislations was facilitated by the inclusion of forestry in the 'concurrent list' in the Constitution of India, following the 42nd amendment to the constitution, which was adopted in 1976. By removing forestry from the 'State list' and putting it in the concurrent list, the Union Government assumed concurrent (and virtually dominant) powers for legislating in this field.

Central Government initiatives in forests have been influenced by two factors. The first factor was the international developments in the field of environmental protection, which commenced with the Stockholm Summit on Human Environment held in the year 1972. The second source of change in the forestry legislations has been the environmental movements within India which included the 'chipko' movement in UP Himalayas.

Joint Forest Management in India:
Assessment of Performance and Evaluation of Impacts

2 Evaluation of Progress

2.1 Spread of JFM

By 1993, three years after the issue of the circular of 1990, substantial progress had been achieved by the States of West Bengal, Orissa, Bihar, Gujarat, Haryana, Himachal Pradesh, Karnataka, Madhya Pradesh, Maharashtra, Punjab, Rajasthan and Tripura. These State Governments issued facilitating instructions and Government orders for institutionalizing the JFM process.

By the year 2000, JFM had embraced an area of 102,500 sq kms, which accounted for 39.22 per cent of the open forest area of 261,310 sq kms in India. FPCs in the country numbered 36,130. Table 1 provides the details. This table, however, excludes 5600 self-initiated forest protection committees covering an area of 78,000 hectares.

By March 01, 2002, JFM had covered 140,953.6 sq. km. spread over 63,618 FPCs in 27 States. Table 2 sums up the details in this regard.

Table 1: Area Covered under Joint Forest Management in India (2000)

State/Union Territory	Forest Area (km)		Area under JFM (km ²)		Number of FPCs	Average Land Area per FPC (hectares)
	Total	Open	Area	% open forest		
Andhra Pradesh	43,290	19,859	16,322	82.19	6,575	2.48
Arunachal Pradesh	68,602	14,447	52.85	0.37	10	5.28
Assam	23,824	8,276	30.6	0.37	101	0.30
Bihar	26,524	13,224	7,192	54.39	1,998	3.59
Gujarat	12,578	5,250	910.7	17.35	706	1.28
Himachal Pradesh	12,521	2,961	620	20.94	203	3.05
Haryana	604	234	630	269.23	361	1.74
Jammu and Kashmir	20,440	9,420	792.73	8.42	1,599	0.49
Karnataka	32,403	7,546	813.5	10.78	1,212	0.67
Kerala	10,334	1,880	40	2.13	21	1.90
Madhya Pradesh	131,195	48,540	58,000	119.49	12,038	4.81
Maharashtra	46,143	22,397	947.27	4.23	602	1.57
Mizoram	18,775	14,427	58.7	0.41	103	0.56
Nagaland	14,221	10,734	6.27	0.06	55	0.11
Orissa	46,941	20,629	4,193.06	20.33	3,704	1.13
Punjab	1,387	876	389.91	44.51	89	4.38

Table 1 (cont.)

State/Union Territory	Forest Area (km)		Area under JFM (km ²)		Number of FPCs	Average Land Area per FPC (hectares)
	Total	Open	Area	% open forest		
Rajasthan	13,353	9,663	2,356.34	24.39	2,705	0.87
Sikkim	3,129	706	21.91	3.10	98	0.22
Tamil Nadu	17,064	8,367	2250	26.89	600	3.75
Tripura	5,546	3,727	185.66	4.98	165	1.12
Uttar Pradesh	33,994	11,036	345.69	3.13	197	1.75
West Bengal	8,349	2,669	4905.82	183.81	3,431	1.42
India – Total	633,397	261,310	102,500.00	39.22	36,130	2.83

Source: Ravindranath et al. (2000)

Table 2: Area Covered under Joint Forest Management in India (2002)

Sl. No.	State	Area Under JFM (Sq. km)	No. of FPCs	Proportion of Open Forests covered by JFM
1.	Andhra Pradesh	17,675.70	6816	82.19
2.	Arunachal Pradesh	58.10	13	0.37
3.	Assam	69.70	245	0.37
4.	Bihar	741.40	296	54.39
5.	Chattisgarh	28,382.55	6412	NA
6.	Goa	130.00	26	NA
7.	Gujarat	1,380.15	1237	17.35
8.	Haryana	658.52	471	269.23
9.	Himachal Pradesh	1,112.47	914	20.94
10.	Jammu & Kashmir	795.46	1895	8.42
11.	Jharkand	4,304.63	1379	NA
12.	Karnataka	1,850.00	2620	10.78
13.	Kerala	49.95	32	2.13
14.	Madhya Pradesh	43,000.00	10443	119.49
15.	Maharashtra	6,866.88	2153	4.23
16.	Manipur	5,072.92	82	NA
17.	Mizoram	127.40	199	0.41
18.	Nagaland	1500.00	55	0.06
19.	Orissa	7834.67	12317	20.33
20.	Punjab	735.60	184	44.51
21.	Rajasthan	3093.36	3042	24.39
22.	Sikkim	6.00	156	3.10
23.	Tamil Nadu	3733.89	999	26.89
24.	Tripura	319.89	180	4.98
25.	Uttar Pradesh	507.03	540	3.13
26.	Uttaranchal	6066.08	7435	NA
27.	West Bengal	4880.95	3545	183.81
	Total	140953.60	63618	

Source: Government of India (2002); Column 5 – based on Ravindranath, N. H. et al (2000)

Joint Forest Management in India: Assessment of Performance and Evaluation of Impacts

Minor differences exist between Table 1 and Table 2. These differences arise from the fact that Table 2 includes five additional States i.e. Chattisgarh, Jharhkand, Uttaranchal, Goa and Manipur. Of this the States of Chattisgarh, Jharhkand and Uttaranchal were carved out in 2000 from the existing States of Madhya Pradesh, Bihar, and Uttar Pradesh respectively. Further, the comparison of Tables 1 and 2 conveys an increase in the area under JFM from 2000 to 2002 by approximately 38,000 sq. km. The increment in JFM area accruing from the addition of the States of Manipur and Goa is only of the order of 5202 sq. km. This seems to indicate that between the two periods there has been considerable progress in the coverage of JFM in India. However, the increase could also have been brought about by incorporation of a substantial portion of the 78,000 hectares of informally community-protected areas into the JFM fold.

2.2 Inter-State Variations in Spread of JFM

Tables 1 and 2 indicate that there are interstate disparities in the spread of JFM in different States. Table 1 shows that Haryana, Madhya Pradesh and West Bengal have extended JFM even to the non-open or non-degraded forest areas. This is evident from ratios above 100 per cent noted for these States in Column 4 of this Table. Therefore these three States can be considered as the most advanced States in terms of spatial coverage of JFM. Least advanced in this regard are the States of Arunachal Pradesh, Assam, Mizoram, and Nagaland. In terms of forest land allotted per FPC, there are also wide inter-state differences. In this regard, Arunachal Pradesh, Madhya Pradesh, Andhra Pradesh and Bihar occupy the first four positions, while the States of Assam, Jammu and Kashmir, Karnataka, Mizoram, Nagaland, Rajasthan and Sikkim occupy the lower rungs. The twin criteria i.e. 'JFM coverage as percentage of open forests' and of 'land entitlement per FPC' are likely to reflect differences in "offer or supply elasticity of forest lands" by different states for JFM purposes. This in turn is also reflective to some extent of the differences in sub-national approaches to joint forest management.

Regression analysis indicates that the inter-State differences in spread of JFM are only partially associated with differences in States' forest areas. Based on data contained in Table 1, a first regression equation postulated area under JFM to be a function of the total forest area cover in each State. The exercise indicated that a 10% increase in total forest area only implies a 2.7% increase in area under JFM. In a second version, the regression equation postulated area under JFM to be a function of the open forest cover in each State. The results indicated that a 10% increase in open forest cover across States in India could result in an increase of 7.7% in area under JFM.

2.3 Inter-State Variations in Implementation of JFM

Existing studies have characterized inter-State differences in JFM in terms of parameters such as (1) composition of FPCs and Village Forest Committees (VFC), (2) the scope and scale of distribution of benefits accruing by way of timber and non-timber forest produce (NTFP) and (3) differences in the legal status of the FPCs. Some of the existing studies have also focused on ecological implications of JFM in forest areas concerned.

The present study looks at certain additional variables to explain inter-State differences. These are:

- Policy thrust i.e. relative priority given to conservation in comparison to sustainable livelihood issues of local communities concerned.
- Relationships of FPCs with general Panchayats or local self-governments.

The inter-State differences in JFM as conceived in terms of these and other parameters are presented in detail in Table A.1 (Appendix).

In general, qualitative assessment of JFM performance indicates that States such as Andhra Pradesh, Madhya Pradesh, West Bengal, Haryana, Bihar and Punjab have shown progress in terms of higher proportion of degraded forests brought under JFM. These States have been sensitive to the gender balance in the matter of composition of the FPCs. Further the new States of Chattisgarh, Uttaranchal and Jharkhand have shown a greater enthusiasm for JFM by providing for enhanced community rights for forest produce. What is more, Chattisgarh, Jharkhand and Uttaranchal, have extended the coverage of JFM over both degraded and non-degraded forest, including protected areas. However, it is premature to assess field level performance of JFM in these States as they were formed only in the year 2000. The States of Assam, Bihar, Gujarat, Himachal Pradesh, Jharkhand, Karnataka, Rajasthan, Tamil Nadu, Uttaranchal and West Bengal have further sought to integrate the local self-government structures with FPCs, thus attempting to link the process of political decentralization with that of the movement for decentralized management of natural resources.

3 Analysis of Implementation Problems and Differences

3.1 Diagnosis of the Causes for Poor Performance of JFM

Different studies regarding the implementation of JFM in different parts of the country attribute the following negative features that have hampered the functioning of FPCs/ VFCs:

- Lack of legal status and financial and executive powers for FPCs.
- Forest Department in certain States vested with arbitrary powers to dissolve FPCs.
- Faulty design of micro-plans and management plans.
- Absence of participation by women in spite of their formal representation in management committees.
- Unreasonable controls over the duration of exploitation of admitted resources leading to low level of exploitation of “admitted” NTFPs.
- Excessive regulations².
- Inadequate remuneration for local communities from JFM activities.³
- Inter and intra-community conflicts that hamper FPC functioning.
- Denial of rights on disposal over valuable NTFPs to local communities.⁴

3.2 Externally Aided Projects as the Context of JFM

According to Ravindranath et al (2000), JFM has been particularly successful in States, which have received external assistance for forestry projects. The States of Karnataka,

² Studies by Muraleedharan et al (1997) in Kerala, Mallik and Panigrahi (1998) in Orissa and by Murali et al. (1996) in Western Ghats, Karnataka indicate that VFCs practiced total exclusion of cattle grazing though it was not ecologically necessary (Murthy, 2000). This is not to deny positive instances where VFCs proactively contributed to sustainable extraction regulations as in the case of Kutling and Nabra in North-east Orissa (Nayak, Subrat et al, 2000).

³ According to Murali, K.S. et al (2000), sales proceeds of timber do not provide even Rs.100 (₹ 2) to a household during a year in JFM areas. Similarly, with reference to Uttar Kannada District, the authors point that the share of 25 % of income that reaches households is too small to induce the community to protect forests (Bhat, P.R., et al, 2000). Studies in Bichiwara village in Rajasthan indicate that income generated by the community from JFM was inadequate, with shortages of critical resources such as firewood acting as possible disincentives to local communities (Goyal, Arun, 2000).

⁴ Some important NTFPs are nationalized and can only be handled by co-operative societies. The argument was unreasonable as cooperatives were inefficient and ineffective in their functioning. Studies by Hill and Shields (1998) for Sal Coppice forest systems in Bankura forest division in West Bengal, indicate how non-wood forest produce form one of the major reasons for forest dependent social groups taking interest in JFM. These instances demonstrate that it would be illogical not to confer rights upon local communities over disposal of NTFPs.

Maharashtra, Madhya Pradesh, Haryana, Himachal Pradesh, Andhra Pradesh and West Bengal have received external assistance, which the authors attribute as the reason for the States bringing in a higher percentage of open forests under JFM. The details of the different donor agencies and the projects they have funded in these States are given in Table 3.

Table 3: Financial Assistance Received from External Donor Agencies for JFM

Name of the Donor Agency	Name of the Projects and Period	Total Financial Assistance (In Rs. million)	Allocation for Participatory Component
World Bank	(1) West Bengal Forestry Project (1992-97)	1,140	464 (41%)
	(2) Maharashtra Forestry Project (1992-98)	4,310	208 (5%)
	(3) Andhra Pradesh Forestry Project (1994-2000)	3,540	101 (3%)
	(4) Madhya Pradesh Forestry Projects (1995-99)	2,460	1,468 (60%)
	Total	1,1450	2,241 (20%)
OECD-Japan	(1) Rajasthan Afforestation Project for Aravalli Hills (1992-97)	1,670	971 (58%)
	(2) Rajasthan Forestry Development Project (1995-2000)	1,390	503 (36%)
	(3) Rajasthan Afforestation and Pasture development along Indira Gandhi Nahar project (1990-2000)	1,070	NA
	Total	4,130	1,474 (36%)
DFID, UK	(1) Karnataka Western Ghats Forestry Project (1993-99)	1,050	534 (51%)
	(2) Himachal Pradesh Kullu Mandi Forestry Project (1994-97)	130	54 (42%)
	Total	1,180	588 (50%)
EU	Haryana rehabilitation of common lands in the Aravalli Hills (1990-97)	481	481 (100%)
Grand Total		17,241	4,784 (28%)

Source: Saxena (1997)

However there are problems in assuming that JFM has worked well in all States that have benefited from externally aided projects. The States of Kerala and Maharashtra, which have benefited from externally aided projects, have not really performed well in terms of the multiple

Joint Forest Management in India: Assessment of Performance and Evaluation of Impacts

criteria for evaluating JFM success.⁵ While Maharashtra has done well in terms of coverage, the structuring of FPCs in this State has not been in accordance with the objective of empowering communities. Similarly the State of Kerala, despite having the benefit of World Bank assisted Social Forestry Project, has not extended the JFM concept beyond “pilot zones” (Damodaran, 1997).

3.3 Evaluation Criteria and Factors Conducive to Success of JFM

JFM in its essence is an institutional incentive for biodiversity conservation. UNEP (1996) categorizes three broad diagnostic tools for adjudging the effectiveness of different incentives (including institutions) in the matter of biodiversity conservation. These tools center on “constraints” which could be “formal” (i.e. arising from laws, legislation policies), “social” (involvement or non-involvement of social groups and individuals having a stake in the conservation of the resource) and/or “compliance” (arising from actual ‘non-compliance’ to the scheme of conservation for which the incentives have been instituted). Smith (1997) views incentives from the point of view of their efficiency as reflected in administration costs.

In the context of JFM, various studies have viewed JFM performance in terms of multiple criteria. These include frameworks developed by Sarin (1993), Raju (1993) and SPWD (1992).

Following Sarin (1993), the framework for analysis of community level institutions can be considered as including the following parameters:

- Viable, social unit of organization
- Organizational norms and procedures
- Accountability mechanism (transparency, equity and democratization)
- Conflict resolution mechanisms
- Autonomous status

Raju et al. (1993) consider six basic traits of community level institutions, namely:

- Transparency
- Clarity of rules
- Level of awareness
- Initiative and independence
- Tenure security
- Satisfaction of basic needs

⁵ Multiple criteria include equity, efficiency, effectiveness, besides area of forests brought under JFM.

The Society for Promotion of Wastelands Development (1992) considers JFM to be successful where:

- there is a strong community forest management group;
- there is a high degree of homogeneity within the community. This may be highest where the community is a homogenous tribal group;
- there is effective leadership;
- easy access to rules and regulations;
- there is a high degree of environmental concern among the members;
- the community attaches a high level of importance to social / religious roles of forests; and
- there is a shared perception of acute resource scarcity.

All these approaches serve as useful diagnostic parameters. However, what is common to them is their emphasis on the 'efficiency', 'effectiveness' and 'ramification' criteria for assessing JFM. The policy-intent or the philosophical approach is not scrutinized. In chapter 5 we introduce a new approach to JFM analysis which accounts for this weakness in the literature. Before, however, we proceed to review recent changes in JFM policy as a response to the observed problems.

4 Recent Policy Changes

4.1 The February 2000 Guidelines

Ten years after the issue of the 1990 circular, the Government of India issued a new set of guidelines on 21st February 2000 for strengthening the joint forest management program in the country. The guidelines were framed in the light of the experience with the JFM process in India since 1990. The new guidelines provide for the following:

Legal Backup to the JFM Committees

Realizing that JFM committees did not have any legal backup, the guidelines called upon all State Governments to register JFMs or village committees under Societies Registration Act by the 31st of March 2000. It was also laid down that nomenclatures for JFM committees might be made uniform in all States by naming them as Joint Forest Management Committees (JFMC). The State Governments were further required to sign Memoranda of Understanding (MoUs) with these committees which defined their roles and responsibilities in different areas. Further, all adults of the village were required by these guidelines to become members of the JFMC.

Participation of Women in the JFM Program

The guidelines called for 50 % of the JFMC general body members to be women and also require 50 % of the women members to be present for a general body meeting. Further, the guidelines also laid down that the management committee or the executive committee should have 33 % of their membership from women general body members. The quorum for holding meetings of the committees should be one third of women executive members or minimum of one, whichever is more. Further one of the office bearers of the MC had to be a woman.

Extension of JFM to Good Forest Areas

The circular laid down that JFM program should cover both degraded and non-degraded areas. Micro-plan and the MoUs had to be different for degraded and good forest areas (crown density greater than 40 %). In good forest areas JFM would concentrate on NTFP management and would not deviate from working plan prescriptions. The benefit sharing mechanisms would be different for the good forest areas and timber would be distributed only if the committees had satisfactorily protected the forests for at least ten years and the sharing percentage was stipulated

as not to exceed 20 % of the revenue. The extent of good forest areas to be included under JFM would depend upon number of village households, but had to observe the twin limits of 100 hectares maximum and 2 km. radius from the village boundary. For degraded forest areas, the radius was fixed at 5 km. from the village boundary. The implementation of JFM in good forest areas had to be done on pilot basis, which had to be monitored carefully.

Preparation of Micro plan in JFM Areas

In case of new working plans, the guidelines called for JFM overlapping working circles to incorporate broad provisions for micro-plans. The micro plans had to be prepared carefully, after detailed Participatory Rural Appraisal (PRA) exercises by the forest officers and JFMCs, so that it reflected the consumption and livelihood needs of the local communities and also utilized locally available knowledge and strengthened local institutions. The micro plan was also supposed to account for market linkages for better returns on NTFPs. Where working plans are already in force, the guidelines call for incorporation of micro plans into these plans and permitted deviations that did not change the basic principles of silviculture.

Conflict Resolution

State Governments were requested to constitute divisional and state-level representative forums or working groups comprising of all stakeholders including NGOs for resolving disputes amongst and within communities.

Recognition of Self-initiated Groups

The guideline called upon the State Governments of Orissa, Bihar, Gujarat, Andhra Pradesh and Karnataka to identify, recognize and register self interest groups and give proper benefits to them after evaluating their performance.

Contribution for Regeneration of Resources

The Guidelines called upon State Governments to ensure that not less than 25 % of the share of village communities arising from sale of resources from regenerated areas should be deposited in the village development fund for meeting conservation and development needs of forests. It also called for a matching contribution to be made by the Forest Department from its share of such sales. Similarly, it was laid down that mechanisms for computing income for sharing of benefits should be transparent.

Joint Forest Management in India: Assessment of Performance and Evaluation of Impacts

Monitoring and Evaluation

The guidelines called for concurrent monitoring and progress of the program at an interval of 3 to 5 years at the Division and State levels.

4.2 The December 2002 Guidelines

These guidelines, the third and the latest in the series, have the following elements:

- JFM Committees should be treated as the ‘basic forest management units’ and a MoU should be signed between them and the Forest Department.
- JFM Committees may be given authority to act and provide adequate monetary and other incentives to participate as genuine stakeholders.
- The plan of action of JFM Committees should be holistic, covering forest lands, village commons and private lands.
- The unique and separate non-political identity of the JFM Committees as ‘guardian of forests’ should be maintained and ensured, though the Committees should take advantage of the administrative and financial position and organizational capacity of the Panchayats’.
- NTFP management is mentioned as crucial for the success of JFM.
- Capacity building and institutional reforms of stakeholders should be accorded priority.

4.3 Changes at the Macro Level

As the JFM process gained momentum at the micro level, the need for instituting macro structures for overseeing and monitoring the progress became essential. Three steps were taken in this regard. The steps are as follows:

Setting up of a JFM Monitoring Cell

Responding to the long-standing demand for creation of a nodal agency for JFM at the national level, the Ministry of Environment and Forests (MoEF) created a JFM Monitoring Cell within its Forest Protection Division. The cell was to collect information on various aspects of the JFM program, analyze it and generate appropriate policy responses (Government of India, 2002).

JFM Network and Stakeholder's Forum

A multi-stakeholder JFM Network was created at the national level, which acts as a regular mechanism for consultation between various stakeholders, and to assist policy makers in obtaining constant feedback for proper policy formulation. The Director General of Forests is the Chairman and the Deputy Inspector General in charge of JFM is the Member-Secretary of the JFM Network. A neutral stakeholders' forum called Resource Unit for Participatory Forestry (RUPFOR) was also created to support the functioning of the network and to promote interaction among various stakeholders. RUPFOR is currently housed within the New Delhi office of Winrock International India (Anon, 2001 and Government of India, 2002).

National Afforestation Programme

Steps have already been initiated to set up Forest Development Agencies (FDAs) at the divisional level in different States. As on March 2003, 285 FDAs have been established at the division level in different States. In the remaining phase of the Tenth Five-Year Plan it is expected that 775 FDAs would be established to cover the remaining divisions (ibid).

5 The PEER Approach to JFM Analysis

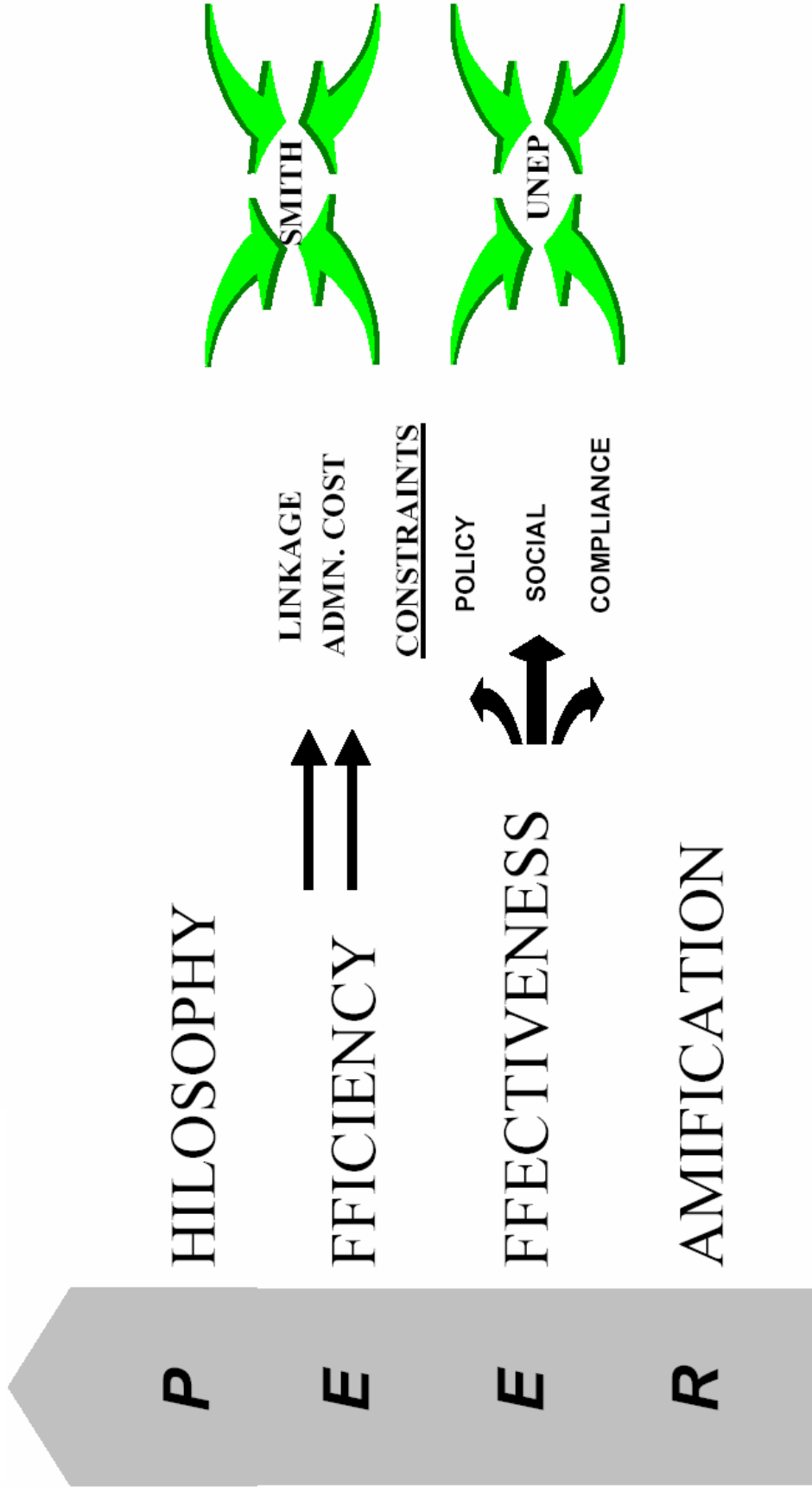
5.1 Specifics of the PEER Approach

A new approach titled “PEER” is proposed here. The approach aims to combine the criteria employed in the existing studies reviewed in Chapter 3 with that of ‘policy intent’ and realization.

The PEER scheme may be seen in Figure 1. P stands for ‘philosophy’, E for ‘efficiency’, the second E for ‘effectiveness’ and R for ‘ramification’. The philosophical issues look into the policy intent underlying the JFM. This involves consideration of the guiding philosophy of the Central Government as contained in the 1990, 2000 and 2002 guidelines. The ‘efficiency’ criterion delves at the cost of translating the guiding norms of policy through a clear stipulation of rules and regulations in the field. The ‘effectiveness’ criterion looks into the extent to which the goals of the policy are realized in the field through return of the desired output, while the ‘ramification’ criterion looks into the larger or secondary externalities of JFM in terms of ‘equity’ and ‘sustainability’ issues.

The key element in the PEER approach is the element of philosophy underlying the policy process in JFM. The current stock of literature unfortunately focuses only on the two ‘E’s and the ‘R’. In reality the ‘P’ factor is the driving force behind ‘efficiency’, ‘effectiveness’ and the ‘ramification’ criteria. This is because the ‘P’ element provides the ideology underlying policy and the underpinnings of the ‘policy intent’ as reflected in differing notions about property rights over forests. Viewed from the ‘philosophy’ angle, it is not difficult to conceive of JFM as a policy effort for effecting a virtual change in property rights over forests. The entire exercise can be seen as a battle between the Center and the State Governments to operationalize their respective policy and property right perceptions on forests. The process of economic liberalization initiated in India since 1991 has added to the importance and complexity of the ‘P’ factor in JFM. The struggles over policy issues are best reflected in the frequent changes resorted to by the Union and State Government in the JFM schemes.

Figure 1: The "PEER" Scheme



5.2 The Philosophical Approach to JFM Policies and the Future Scenario

5.2.1 *Center versus State Philosophy*

One of the key philosophical factors that has governed the evolution of forest policies and legislations in India since the colonial period has been the growing separation of the protection and conservation issues from that of the rights to livelihoods of local communities towards forests and their resources. During the colonial period, while the purpose of protection of forests was to permit exploitation of timber and commercially relevant forest products for industrial use, in the 1980s the initial accent on 'conservation' was to prevent land-use changes from reducing the forest area in the country. In both cases, the issue of conservation of forests was separated from the rights of local communities over forests, with the former given priority over the latter.

The inception of the National Forest Policy 1988 and the 1990 JFM circular, attempted to change the attitude. In other words, the JFM circular of June 1990 clearly sought to balance the concept of resource conservation with the requirements of the local communities living near forests. In many ways, this marked a paradigm shift from the earlier philosophy, which deemed protection and conservation of forest resources to be the over-riding objective. However, this desired shift was not effectuated. To a large extent, the old thinking persisted amongst the State Governments, with many studies aiding the old thinking. A case in point has been the number of studies, that have pointed to the adverse ecological impact of NTFP harvesting on the structure and dynamics of plant populations (Hall and Bawa, 1993; Peters, 1994; Murali et al., 1996; Muraleedharan et al., 1997 and Muraleedharan et al., 1999 as cited in Capistrano, 2000).

State Forest Departments, which have been used to seeing forests as a resource for exploitation, were relatively comfortable with the Forest Conservation Act 1980, since it had the effect of keeping forestlands intact. State Forest Departments have also been votaries of managing forests on the basis of working plans. Working plans have been, however, neutral to the tenets of communitarian management. They involved a technique of spatially segregating forests in terms of their different functions. Working plans were meant to ensure that commercial exploitation of forests proceeded on the principles of sustained yield. Working plans were designed in accordance with the fundamental premise of the Indian Forest Act 1927, which aimed to extinguish rights and concessions of local communities through a process of compensation and settlement. The Forest Conservation Act 1980 only facilitated the operation of the working plans. However, the 1990 JFM circular through its emphasis on 'participatory management' and 'distribution of benefits' threatened to revive rights and concessions to local communities, which were for long considered as settled and non-reversible. State Governments considered the National Forest Policy of 1988 (with its emphasis on rights and concessions of local communities and tribals) and the JFM circular of 1990 as going against the settled principles of separating conservation of forests from the issue of rights and concessions of local

communities. In other words, State Governments considered the two interventions to be violating established State property rights over forests.

Indeed the 1990 guidelines clearly laid down that local village communities, which organize into a village institution specifically for forest regeneration and protection, should have access to forestlands and usufruct benefits. This had the effect of setting in motion a new system of rights and concessions in reserved and protected forest areas of the country.

There are other sources of conflicts between the Center and State Governments on JFM. This has much to do with the basic philosophical approach to JFM adopted by different States. Most of the State Governments responded to the 1990 circular by continuing to maintain the primacy of regeneration and conservation of forests, over the rights to income and livelihood of rural communities. The States of Haryana, Jammu and Kashmir and Punjab formed honorable exceptions to this rule. Similarly, the majority of the State Governments (barring Madhya Pradesh) was not in favor of disturbing the existing forest working plans in JFM areas (Upadhyaya, 1997). Most of the States did not believe in empowering FPCs or their Executive Committees with executive and financial responsibilities. To this extent, the guiding sub-national philosophy towards JFM was a narrow conservationist approach based on the conventional management through working plans. The contradiction between the policy intent of the Government of India and the policies pursued by the State Government lay at the roots of the “ineffectiveness”, “inefficiencies” and “negative ramifications” of the JFM process in India.

By contrast, the focus of the Central Government, since the inception of the National Forest Policy of 1988, has been on a subtle and graduated shift in property rights over forestlands through a systematic revival of the role of local communities in the management of forests. Indeed the February 2000 circular of the Government of India emphasized the conferment of legal status to the JFMCs (by registering them under the Societies Registration Act, 1861). The circular also sought extension of JFM to non-degraded forest areas and the incorporation of JFM plans in the existing and new working plans. This circular thus conveyed the policy intent of the Central Government for affecting a new system of property rights and management regimes over forests.

Further, the insistence upon formation of Forest Development Agencies with effect from 2001 was designed to ensure that JFMCs do not lack in financial resources for carrying out their activities. The Central Government, by bypassing the State Government, and directly reaching out to the JFMCs has conferred *de facto* legality to JFMCs as they have done earlier in respect of Panchayat Raj institutions of India. Also, by creating conditions for financial autonomy, the Central Government has reduced the latitude of State Governments for interfering with the functioning of JFMCs. These initiatives mark a major philosophical shift towards empowerment of JFMCs.

Joint Forest Management in India: Assessment of Performance and Evaluation of Impacts

The 2000 and 2002 guidelines on JFM attempt to tighten the loopholes that existed in the 1990 JFM circular. The 1990 guidelines, by denying FPCs legal rights, had hamstrung their effectiveness, efficiency and positive ramifications. The thinking underlying the change in policy in 2000 and 2002 is as follows. Once registered as societies, JFMCs are deemed to enjoy a higher degree of executive and financial autonomy in forest management. They could enjoy rights of tenure over forest products and logically demand a greater say in the design of joint forest management plans and micro-plans. These developments in turn, could overcome the loopholes associated with inadequate grant of executive and financial powers to JFMCs, overcome their inefficiencies and inadequacies and balance the objective of ‘conservation’ with the goal of ensuring ‘sustainable livelihoods’ of local communities. The only moot issue is the extent to which the 2000 and 2002 initiatives promote social equity. It is quite likely that in the absence of free and fair elections to Management or Executive Committees, dominant economic and social groups would control the JFMCs. This could further marginalize the socially and economically weaker stakeholders from the process. This is where the roles of FD and NGOs can be critical.

Interestingly, there has been a growing debate in recent times on the desirability of involving the private sector in the forestry sector. These discussions have also focused on linking the role of the private sector with the JFM process (Saigal et al., 2002). This debate raises interesting philosophical issues for the JFM process in India. For one, it advocates greater private sector participation in JFM areas, through marketing of NTFPs and other forest produce generated from JFM. However the study is cautious about pushing the idea aggressively. It warns against the process of private sector interference adversely impacting on equity. What is nevertheless clear from the study is its advocacy for an economic liberalization process in the forestry sector. But such a step could entail amendment to the existing Forest (Conservation) Act, 1980, particularly when privatization programs involve lease or transfer of forestlands to private sector for plantation activities. If private sector involvement is confined to upstream processing of NTFPs, the provisions of the 1980 Forest (Conservation) Act may not be attracted. In the future, the key philosophical issue in the JFM process will be the extent to which community empowerment could be reconciled with the tenets of economic liberalization and private sector involvement in this process. Empowerment of communities could also proceed to the stage where these communities could undertake negotiations with corporate groups or companies for lease of harvesting rights over forest lands protected by them. However, it is important to ensure here that such negotiations do not lead to the moral hazard of unsustainable harvesting practices by corporate groups (Engel, López and Palmer, 2003)

Another option could be for JFMCs to enter into buy-back arrangements with the private sector. In the event, the forest departments could oversee the fair and equitable implementation of the buy-back agreement.

5.2.2 *Sub-National Policy Intents as Causes of Inter-State Variations*

Finally comes the question of whether inter-state differences in approaches to JFM are colored by sub-national policy intents. As has been noted, states such as Madhya Pradesh, West Bengal, Haryana, and Punjab have witnessed rapid growth of JFM both in terms of ‘scope’ and ‘area’ covered under the programme. This also appears to be the case with the newly formed tribal/hill States of Jharkhand, Chattisgarh and Uttaranchal. The general conclusion one can draw from these successful instances is that State Governments, which have been committed to political decentralization, devolution and tribal welfare have sincerely attempted to implement JFM. Indeed in the tribal States of Chattisgarh and Jharkhand the facilitating environment that exists for the functioning of autonomous tribal councils and Scheduled Areas could considerably promote the development of a JFM process that is removed from a “narrow conservationist” approach to forest management. The only exception appears to be the State Government of Kerala, which, despite successful experiments with political decentralization, has not attempted to push the JFM process forward. To a large extent this can be attributed to the policy of the State Government of Kerala to implement decentralization without tinkering with the notion of State control over natural resources. The communist and the left parties of Kerala have for long upheld the principle of public ownership and control over natural resources and a scheme of political decentralization which is situated within the framework of such system of property rights. It is apparent that JFM, with its accent on restructuring property rights over forests, will never find favor with such State Governments. Finally, a word about the FDAs. While it is true that the FDAs can target funds to the stakeholders directly, the moot issue is whether these funds would be utilized to support activities that are preferred by the local communities. In the absence of capacity building to plan, design and execute the JFM schemes, the FDAs may not generate the desired results (Karki, Madhav, pers. comm., 2003).

5.3 The Efficiency Dimension

The JFM process in India has suffered from key difficulties and constraints, which have hampered its efficiency in terms of planning, technology adoption and execution. While case studies from West Bengal denote the successful effort of Forest Protection Committees in micro planning and technology adoption and practice particularly in relation to natural regeneration, there have been instances where technologies relying on non-mechanical measures have not succeeded due to implementation problems. In the Uttar Kannada District of Karnataka, studies have indicated that economic efficiency of biomass produced from plantations under JFM, have not been cost-effective as compared to regular Forest Department plantations (Bhat, P.R., 2000), although it must be conceded that the methodology of carrying out the cost-benefit analysis was different. Similarly, there have been major failures when it comes to efficiency in distribution of produce. While distribution of produce has been effective in cases from West Bengal (as

Joint Forest Management in India: Assessment of Performance and Evaluation of Impacts

reported by Malhotra and Poffenberger (1989) and Mukherjee (1997)) and for cases from Jammu and Kashmir, and Bilaspur and Hoshangabad in Madhya Pradesh, there have been failures in South-West Bengal (Vedusol FPC as reported by Pattnaik, Binay Kumar and Dutta (1997)). In the latter areas, though the harvest of the forest produce was undertaken on time, FPC members did not receive their share of 25 % of harvest for more than 2 years. Similarly in Kamdebpur FPC, wood lots were harvested and auctioned by the Forest Department, with the FPC members kept out of the process. These instances serve to bring out the constraints on the efficiency front as far as economic incentives under JFM are concerned. In Karnataka, studies in Uttar Kannada District of 18 VFCs indicated that only one third of the community assigned forest produce was distributed to VFC members (Damodaran, 2000). Provision of economic incentives has been impaired in many cases by insufficient resource generation or by inadequate distribution mechanisms or simple high-handed and arbitrary decisions by the FD. One of the positive requirements for the success of the incentive scheme is a community oriented approach on the part of the Forest Department.

The 2000 and 2002 circulars are bound to change these inefficiencies, in case FPCs as societies acquire the right of designing management plans, conducting micro-planning and undertake distribution of products among beneficiaries.

5.4 The Effectiveness Dimension

The effectiveness dimension of JFM programs has had mixed results, judging by the effects JFM had in improving regeneration of forests and the standards of living of local communities. In Jammu and Kashmir, West Bengal, Bilaspur and Hoshangabad areas of Madhya Pradesh regeneration of forests has been reported with positive effects. Sustainable harvesting of NTFPs by local communities is also reported for these areas. However, in South-West Bengal some FPCs experienced failure in conserving forests due to FDs not honoring their agreed commitment of sharing the benefits. Such instances of inadequate effects of JFM may be countered by greater capacity building and protection efforts on the part of local communities. Further, lack of effectiveness in very many cases has arisen from a mismatch between local demands for forest produce and the management plans. Management plans, which are tailored to meet the requirement of the existing working plans, do not effect improvements in forests due to lack of local community interest. The provisions for integrating working plans with local management plans as contained in the 2000 and 2002 circulars could go a long way in obviating such adverse situations noticed on the 'effectiveness' front.

5.5 The Ramification Dimension

A review of JFM activities in different parts of the country, brings out mixed outcomes as to whether the JFM process has contributed to social equity. Studies by Patanaik and Dutta (op. cit.) in South-West Bengal, mention how forest-dependent Scheduled Caste households experienced income improvements as a consequence of greater time spent on forest-based activities, including the collection of forest produce. The other feature of a 'positive' equity nature of JFM has been in the reorganization and redistribution of forestlands falling under FPC jurisdiction. This was undertaken to correct disparities in per capita availability of land for FPC members on an inter-community basis. (A minimum per capita land allotment of one to two hectares per FPC member can be considered a must for the success of JFM.)

However, there have been instances where inter- and intra-community equity has been disturbed by JFM. For example, a comparison of JFM and non-JFM villages in the state of Jharkhand found that richer sections of JFM villages have benefited at the expense of poorer ones (Kumar, 2002). Other examples are in relation to FPCs in Jammu and Kashmir and some FPCs in West Bengal. In Jammu and Kashmir, in Jasrota Forests, JFM resulted in the exclusion of the Bakkarwal community of grazers. The village forest committee of Jasrota was not keen to open the protected area for grazing, and to allow grasses to be exploited on 'cut and carry' basis. This had an adverse effect on nomadic communities who could not depend on alternative fodder resources such as crop residues for feeding their animals (Chatterji et al., 1994). The result has been that this community has lost in the process of JFM by way of negative economic returns. Similarly, inter-FPC differences in terms of disparities in per-capita forestland availability were attempted to be resolved through reorganization of FPCs. The third dimension of equity relates to the balance between NTFP and timber produce. Since tribals, women and weaker sections of the society depend upon NTFPs, any JFM production plan that favors timber produce can create injustice towards weaker sections. Studies by Sarin (1996, 1999) and Agarwal (2001) have documented cases where JFM has led to the deprivation of poor people of their rights to access non-timber forest produce. The Padaga village case in Jammu and Kashmir also indicates the problems of equity that may arise from a production plan, which does not meet the subsistence needs of the community members. Thus an economic incentive package was structured here which increased inequity by providing a bias towards production of commercial biomass resources at the cost of subsistence biomass resources. (Chatterji et al., 1994). Hill and Shields (1998) indicate with reference to the mixed teak forest systems in Rajpipla forest division in Gujarat, how JFM caused head loaders and NTFP collectors to suffer from losses due to decreased collection. Accordingly, the authors emphasize on the importance of full involvement of all groups in decision-making.

The other aspect of the 'ramification element' is the impact JFM has in promoting multipurpose plantations. Studies by Bhat (2000) indicate that the choice of species in a multi-

Joint Forest Management in India: Assessment of Performance and Evaluation of Impacts

species plantation model was not left to the communities, with the result that **JFM** tended to encourage monocultures.

These negative instances arise from the FD's top-down approach, the process of FPC formation in different States, as well as the absence of PRA techniques in determining the social and territorial boundaries of JFM. Consultation with Panchayats and local communities is a must to ensure that JFM gets support of all communities. In certain rare instances, where even Panchayat Raj institutions do not take an objective view on the issue of including different stakeholders, it may be desirable for NGOs with knowledge of the area to be consulted in the matter of formation of the FPCs and in the formulation of management plans. The December 2002 guidelines are significant particularly with regard to its observation that the 'JFM Committee should take advantage of the administrative and financial position and organizational capacity of the Panchayats'.

Similarly, the February 2000 guidelines have also significantly underlined the role of NGOs as facilitators in resolving the inter-village and intra-village conflicts. This is being suggested also keeping in mind that it may not be desirable for the Forest Department in all cases to act as the mediator in inter-village conflicts. This is eminently supportable given studies of Bichiwara Village in Rajasthan by Goyal (2000) that indicated the failure of the Forest Department in resolving inter-village conflicts.

6 Conclusions

To conclude, the JFM process in India needs to be appreciated and analyzed from a wider philosophical perspective that partakes of the issue of changing property rights over forest resources entailed by the process. Such a perspective can provide better appreciation of the changing policy intent of the Central Government noticed since the National Forest Policy of 1988 and the circular of June 1990. In the case of JFM, the changes in guidelines noted in 2000 and 2002, serve to indicate the growing efforts on the part of the Central Government to fashion JFM as a property right restructuring measure. In India, with forests coming under the concurrent list of the Constitution in 1976, the *de facto* role of the Union Government in forest legislations has significantly increased. Though the Central Government has been exercising persuasive powers to convince State Governments to launch JFM in the true spirit of the National Forest Policy, 1988, there have also been efforts to wield the ‘stick’ by way of directly channeling financial resources to FPCs. The original JFM guidelines issued in June 1990 were “indicative” in nature and served to underline the desirability of a shift in the system of governance of forests in the country. It outlined the need for a participatory approach towards the management of degraded forests by providing suitable incentives to local communities. However, the guidelines did not specify the structure and nature of local bodies that were to be constituted for the purpose. The generality of the circular was exploited by State Governments, most of which accorded primacy to ‘conservation’, over the livelihood needs of local communities. Further, by constituting FPCs without legal sanction and by formulating management plans that were more consistent with traditional working plans, the State Governments largely modified the policy intent of the Government of India, with adverse consequence to JFM. The spirit of the JFM notification was thus lost. The revised guidelines of February 2000 and December 2002, issued by the Government of India, have attempted to plug the loopholes in the JFM schemes as implemented in the States. These guidelines assert the need for effecting changes in property rights over the management of both degraded and non-degraded forests in India. Conceivably, in the event of State Governments implementing the revised guidelines in their true spirit, it is likely that the JFM would be restructured in the manner envisaged by the Central Government. By conferring legal rights to FPCs and direct channelization of funds through the medium of the Forest Development Agencies (FPAs), the role of State Governments in influencing JFM in a manner contrary to the policy intent of the Central Government is considerably reduced. The larger issue that remains to be seen is how the newly talked about agenda of private sector involvement in India’s forestry sector would go with the JFM process in the country.

References

- Agarwal, B. 2001. Participatory Exclusions, Community Forestry, and Gender: An Analysis for South Asia and Conceptual Framework, *World Development*, 29 (10).
- Anonymous. 2001. Proceedings of the JFM Nodal Officers Meeting, 5th December 2001, New Delhi. <http://www.rupfor.org/jfmcCell/Proceedings-nodalofficersmeet.doc>; accessed 11 December 2003.
- Bhat, P. R. 2000. Joint Forest Planning and Management in Uttara Kannada: A Micro and Macro Level Assessment (with perspectives of the Forest Department). In: Ravindranath N. H. et al (eds.): *Joint Forest Management and Community Forestry in India: An Ecological and Institutional Assessment*, Oxford & IBH Publishing Co. Pvt. Ltd., New Delhi, pp. 59-98.
- Capistrano, D. 2000. Institutional Change, Enterprise and Managing for Multiple Use in JFM. In: Shukla, P. K. et al (eds.): *Sustainable Forest Management through People's Participation*, ICFRE-Ford Foundation Project, Tropical Forest Research Institute, Jabalpur.
- Damodaran, A. 2002. Tree Plantations and Biodiversity in the Indian Context, Working Paper No. IIPM/WPS/WTO Cell/05, Indian Institute of Plantation Management, Bangalore.
- Damodaran, A. 2001. *Towards an Agroecosystem Policy in India: Lessons from Two Case Studies*, Tata McGraw-Hill, New Delhi.
- Damodaran, A. 2000. *Report on Economic Instruments for Biodiversity Conservation in India: An Assessment Exercise for the National Biodiversity Action Plan*, Technical Report No.3, Indian Institute of Plantation Management, Bangalore.
- Damodaran, A. 1997. Countering Forest Encroachment with JFM: A Simulation Exercise, Working Paper No. WPS/9712, Indian Institute of Plantation Management, Bangalore.
- Damodaran, A. 1992. Economics of Forest Conservation and Sustainable Development. In: *Proceedings of the Seminar on Socio-Economic Research in Forestry*, Thrissur, pp. 308-408.
- Engel, S., López, R., and C. Palmer. 2003. *Community-industry Contracting Over Natural Resource Use in a Context of Weak Property Rights: The Case of Indonesia*, Paper presented at the Annual Meetings of the International Society of New Institutional Economics (ISNIE) in Budapest, Hungary, September 11-13, 2003.
- Government of India. 1991. *Status Paper on Forestry Situation*, Ministry of Environment and Forests, New Delhi.

- Government of India. 2002. *Joint Forest Management: A Decade of Partnership*, RUPFOR, Ministry of Environment and Forests, New Delhi.
- Goyal, A. 2000. Community Forestry: Management Practices in Bada Bhilwara Hamlet, Bichiwara Village, Rajasthan. In: Ravindranath N. H. et al (eds.): *Joint Forest Management and Community Forestry in India: An Ecological and Institutional Assessment*, Oxford & IBH Publishing Co. Pvt. Ltd., New Delhi, pp. 221-231.
- Hall, P. and Bawa, K. 1993. Methods to Assess the Impact of Extraction on Non-timber Tropical Forest Products on Plant Populations, *Economic Botany*, 47(3), pp. 234-247.
- Hill, I. and Shields D. 1998. *Incentives for Joint Forest Management in India – Analytical Methods and Case Studies*, World Bank Technical Paper No. 394, Washington D. C.
- Jaya Chatterji and Mineesh Gulati. 1994. Co-Managing the Commons: The J & K Experience, *Society for Promotion of Wastelands Development*, New Delhi.
- Kumar, S. 2002. Does participation in common pool resource management help the poor? A social cost-benefit analysis of joint forest management in Jharkhand, India, *World Development*, 30 (5), pp. 763-782.
- Malhotra, K. C. and Poffenberger, Mark (eds.). 1989. *Forest Regeneration through Community Protection: The West Bengal Experience*, West Bengal Forest Department, Calcutta.
- Murali, K. S., Shankar, U., Shaanker, R. U., Ganeshiah, K. N and Bawa, K. S. 1996. Extraction of Non-timber Forest Products in the Forests of Biligiri Rangan Hills, India. Impact of Extraction on Regeneration, Population, Structure and Species Composition, *Economic Botany*, 50(3), pp. 252-269.
- Murali, K. S. et al. 2000. Status of Participatory Forest Management in India: An Analysis. In: Ravindranath N. H. et al (eds.): *Joint Forest Management and Community Forestry in India: An Ecological and Institutional Assessment*, Oxford & IBH Publishing Co. Pvt. Ltd., New Delhi, pp. 25-58.
- Murthy, Indu K. et al. 2000. Community Forestry: An Ecological, Economic and Institutional Assessment in the Western Ghats. In: Ravindranath N. H. et al (eds.): *Joint Forest Management and Community Forestry in India: An Ecological and Institutional Assessment*, Oxford & IBH Publishing Co. Pvt. Ltd., New Delhi, pp. 171-204.
- Nayak, S. et al. 2000. Community Forest Management in the Sal Forests of North Eastern Orissa. In: Ravindranath N. H. et al (eds.): *Joint Forest Management and Community Forestry in India: An Ecological and Institutional Assessment*, Oxford & IBH Publishing Co. Pvt. Ltd., New Delhi, pp. 191-204.
- Neela, M. 1997. Why Joint Forest Management (JFM) Failed to Deliver? A Case Stud of Arjuni Mouza, Midnapore (West Bengal, India), *The Indian Forester*, 123 (6), pp. 546-555.
- Pattnaik, Binay Kumar and Dutta. 1997. JFM in South-West Bengal: A Study in Participatory Development, *Economic and Political Weekly*, 345 (8047), December 13, pp. 3225-3232.

Joint Forest Management in India: Assessment of Performance and Evaluation of Impacts

- Peters, C. M. 1994. Sustainable Harvest of Non-timber Plant Resources in Tropical Moist Forest: An Ecological Primer, *The Biodiversity Support Program*, Washington, D.C. pp. 45.
- Raju, G. et al. 1993. *Development of People's Institution for Management of Forests*, VIKSAT, Ahmedabad.
- Ravindranath N. H. et al (eds.). 2000. *Joint Forest Management and Community Forestry in India: An Ecological and Institutional Assessment*, Oxford & IBH Publishing Co. Pvt. Ltd., New Delhi.
- Saigal, S. et al. 2002. *The New Foresters: The Role of Private Enterprise in the Indian Forestry Sector*, International Institute for Environmental Development, London.
- Saxena, N. C. 1997. *Saga of Participatory Forest Management*, CIFOR, Bogor, Indonesia.
- Sarin, M. (1993): *From Conflict to Collaboration: Local Institutions in Joint Forest Management*, JFM Working Paper No. 14, Society for Promotion of Wastelands Development and Ford Foundation, New Delhi.
- Sarin, M. 1996. From conflict to Collaboration: Institutional Issues in Community Management. In: Poffenberger and Betsy McGean (eds): *Village Voices, Forest Choices: Joint Forest Management*, Oxford University Press, Calcutta.
- Sarin, M. 1999. *Policy Goals and JFM practice: An Analysis of Institutional Arrangements and Outcomes*, Policy and Joint Forest management Series-3, World Wide Fund for Nature-India.
- Smith St. 1997. Environmental Tax Design. In: Timothy O' Riordan (ed): *Eco Taxation*, Earthscan Publication, U.K. pp. 21-36.
- SPWD. 1998. *Joint Forest Management Update 1998*, Society for Promotion of Wastelands Development, New Delhi.
- SPWD. 1992. *Joint Forest Management: Concepts and Opportunities*, Proceedings of the National Workshop at Surajkund, August 1992.
- UNEP. 1996. *Sharing of Experiences on Incentive Measures for Conservation and Sustainable Use*, Note by the Executive Secretary, Conference of the Parties to the Convention on Biological Diversity, Third Meeting, Buenos Aires, November.
- Upadhyaya, J. K. 1997. Village Resource Development Programme of Village Forest Committees in Bilaspur Forest Circle, Madhya Pradesh – A Case Study, *The Indian Forester*, 123 (6).

Appendix

Table A1: Inter-State Differences in JFM for selected States in India

Major issues of the resolution	Andhra Pradesh	Arunachal Pradesh	Assam	Bihar	Chattisgarh	Gujarat	Haryana	Himachal Pradesh	Jharkhand	Jammu & Kashmir	Karnataka	Kerala
Date of Issue	28.09.92	03.10.97	1998	08.11.90	22.10.01	13.03.91	13.06.90	12.05.93	27.09.01	19.03.92	12.04.93	13.10.97
Amendments	07.12.96	---	---	Order on the utilization and accounts procedure has been issued in 1994	---	27.06.94	---	---	---	---	16.12.96	16.01.98
Forest Category	Degraded forests	Degraded unclassified forests	Degraded forest areas	Degraded protected forests	Dense of degraded forest areas	Degraded forests	Degraded forest land adjoining villages	Protected forests, land vested with the Government under H.P. Ceiling on Land Act, 1972 and Village Common Lands (vesting and utilization) Act, 1974	Degraded and non-degraded forest areas	Degraded forests	Degraded forest land (canopy cover 0.25 and less), state forest which are predominantly inhabited by tribals irrespective of canopy cover	Degraded natural forests and plantation
Policy Analysis	Conservation	Conservation	Conservation	Conservation	Livelihood/ Conservation	Conservation	Livelihood	Conservation	Conservation	Livelihood/ Conservation	Conservation	Conservation
Local Self Government	No	No	Yes	Yes	Yes	Yes	No	Yes	Yes	No	Yes	Yes
Participants	Households of hamlets/ villages/cluster of villages particularly those dependent on forest for daily use	Villages adjoining composite unclassified forests	People of homogenous groups living in the vicinity of the forest concerned.	All willing adult residents	Village/ hamlet/group of hamlets	Village community (at least 60% families of the village should be members)	Village households	Villagers of adjoining tikka	Protected areas including National Parks and Sanctuaries	One person from each family of adjoining villages	Any person belonging to villages	Any two adult members of a household
Management Unit	Hamlet/village/ cluster of villages	Determined on extent of unclassified forest area which can be delineated into a composite block	Family	Village/ group of villages	Village/ hamlet/group of hamlet	Village	Hamlet/ village/gram panchayat in exceptional cases	Village/tikka	---	Village/ villages	Village/group of villages	Ward/hamlet/ user group

Table A1: Inter-State Differences in JFM for selected States in India

Major issues of the resolution	Andhra Pradesh	Arunachal Pradesh	Assam	Bihar	Chattisgarh	Gujarat	Haryana	Himachal Pradesh	Jharkhand	Jammu & Kashmir	Karnataka	Kerala
Executive Committee A) People's representation B) Gender Sensitivity	10-15 elected representatives from VSS (30% women) 30% women representation	--- 30% women representation	Goanbura or any of local gram panchayat Elected representative of the beneficiaries	One mukhiya, sarpanch, representatives of headloaders or otherwise forest dependants (men and women) 20 to 33% women representation	11 to 21 members headed by President/ Vice President 33% women members	2 women members, one representative from concerned village panchayat, other members having interest in protection At least 2 women member	--- No	Out of a total of 9-12 members minimum of 5 members are to be from the village/ <i>tikka</i> , half of which would be women, 1 from gram panchayat <i>antodaya</i> family, 1 from <i>mahila</i> member 50% women representation	18 to 12 members 33% women members	Eleven (2 women, 2 SC/ST) 18% women representation	2 members from SC/ST, 2 women members, 1 landless labourer, 1 village artisan, 4 general 20% women representation	9 elected representative (at least 3 women and proportional representation of SC, ST) 33% women representation
C) FD representation	Forest Guard/ concerned Forester/ Deputy Ranger	---	Beat officer/forest officer up to the rank of foresters – 1	Forest Guard	Forest guard/ foresters	--	---	Forest Guard	Forest guard	Block Forester/ Forest Guard	Forester/Forest Guard with SSLC qualification or agriculture assistant, in that order of preference	Forester/Forest Guard
D) Others	Local NGO, Village Administrative Officer, Village Development Officer, Teacher	---	---	NGO, Teacher	---	NGOs	---	---	Customary village officials	---	Village accountant Mandal panchayat secretary, one NGO	NGO representative, a nominee from tribal development department
Tenure of Committee	Two years	One year	---	Two years	Two years	---	---	---	Two years	One year	Five years	Two years
Committee registered under Societies/ Cooperative Acts	---	Yes	---	---	---	Yes	Yes	No	Yes	No	Yes	---

Table A1: Inter-State Differences in JFM for selected States in India

Major issues of the resolution	Andhra Pradesh	Arunachal Pradesh	Assam	Bihar	Chattisgarh	Gujarat	Haryana	Himachal Pradesh	Jharkhand	Jammu & Kashmir	Karnataka	Kerala
Power of Committee A) Punish/line	Apprehend the forest offender and hand over to concerned authorities	Yes	Ensure protection of forests/inform forest personal about trespass and willfully or maliciously damaging forest acts.	VFMPs is empowered to take local action, cancel membership of members/ managing committee	Inform forest Department about offences	---	Yes	Recommend for punishment	Ensure protection of forests/ ensure timely detection of forest offences	No	Yes	--
B) Cancel membership	Yes	No	---	Yes	Yes	---	Yes	No	---	No	Yes	Yes
C) Frame rules	Yes	Yes	---	---	---	---	Yes	Yes	---	Yes (in consultation with FD Officer)	Yes	---
D) Distribute benefits	-	No	To assist forest officers in proper distribution of earmarked usufructs	---	Yes	---	Yes	---	---	---	Yes	---
Power of Forest Department A) Cancel membership	No	Yes	Yes	---	---	---	---	Yes (in consultation with general house)	---	Yes	---	Yes
B) Dissolve FPC	No	Yes	Yes	---	Yes	Yes	---	Yes	Yes	---	Yes	Yes
Share of members A) Fuel wood, NTFP, others	All NTFP except for which GCC holds monopoly rights; Beedi leaf-50% of the net income from the increased yield	Free of cost for domestic consumption	Permitted to collect minor forest produce, dead and fallen leaves and wood and fodder free of cost without causing damage to forests/	Forest produce will be provided to village people at market prices; one third share of proceeds would be deposited in village development	Committees eligible to get annual royalty fee	Dry fallen branches and MFP-as per agreement; Cut back operations-fuel wood will be given at half the scheduled rate as per requirement of villagers;	Grasses-both fodder and bhabbar (grassland) will be leased to HRMS instead of private contractors; Where free grazing is in practice, a minimal	Entire usufruct	90% of the net profit after marketing shall be transferred to VFMP – Divided into 3 parts first part to Village Development Fund, 2 nd to Forest Development	Entitled to collect free of royalty grass, fodder, dry and fallen wood	50% of NTFP, fruits, timber and final harvest through local sale to local villagers at FD rates; remaining will be auctioned and proceeds shared as- 50% to	100% of net revenue from NTFPs

Table A1: Inter-State Differences in JFM for selected States in India

Major issues of the resolution	Andhra Pradesh	Arunachal Pradesh	Assam	Bihar	Chattisgarh	Gujarat	Haryana	Himachal Pradesh	Jharkhand	Jammu & Kashmir	Karnataka	Kerala
			plantations – 50% of net receipts from silvicultural thinning and 25% from main felling.	fund		Cleaning-small timber will be given in lieu of wages for members; Thinning-25% poles as compensation for members as wages	charge may be levied by HRMS for cut and carry; Irrigation provided to members sourcing water from dams constructed in forest land		Fund and 3 rd to Executive Fund.		Government, 25% to VFC member, 25% of village forest development fund	
B) Timber	100% share in timber and bamboo after deducting the expenditure incurred/likely to be incurred on raising plantations, silvicultural operations and harvesting	25% of gross revenue will be distributed equally among members, 25% to development fund	---	One third share of proceeds would be deposited in village development fund	Forest produce equivalent to 10% of value. If the amount after deducting costs of exploitation of timber and bamboo for FPCs and 30% for VFCs is admissible.	50% to village community after deducting expenditure on harvesting	In case of timber, catechu, fruits, medicinal herbs, net income could be shared with HRMS	25% of net sale proceeds of the final harvest to be put in village development fund No	---	25% of harvest	As mentioned above	10% of net revenue of harvested forest produce from plantation; 50% for development activities other than forestry, 25% to members, 25% for future sustained management of forest
State level Coordination/ Steering/ Working group	Yes	No	---	No	Yes	Yes	No	No	---	No	No	No

Table A1: Inter-State Differences in JFM Schemes in India (Contd..)

Major issues of the resolution	Madhya Pradesh	Maharashtra	Nagaland	Orissa	Punjab	Rajasthan	Tamil Nadu	Tripura	Uttar Pradesh	Uttaranchal	West Bengal
Date of Issue	10.12.91	16.03.92	05.0.3.97	03.07.93	14.07.93	16.03.97	08.08.97	20.12.91	30.08.97	26.12.01	12.07.89 (S.W. Bengal) 15.11.91 (North Bengal) and Darjeeling Hill area)
Amendments	04.01.98	Addendum – 27.08.92	--	Corrigendum- 04.08.94 Addition – 07.12.94 Resolution – 30.9.96	---	-	--	--	---	---	27.07.90 (S.W. Bengal)
Forest Category	Degraded forest for constituting VFCs; well stocked forest for constituting FPCs	Degraded and barren forest land	Non Government land (that can be put to forestry virgin forest), Government land	Degraded forests Preservation Act	Government, private and community forests in the Kandi tract where Forest Department exercises control under the land	Degraded forests	Protected and degraded forests	Degraded forests	Village forests that are not governed by U.P. Panchayati Forest Rules, 1976 (Panchayat forest can also be brought under JFM by a resolution by the Panchayat and with concurrence of DFO)	Reserved/ Protected forest lands	Degraded forests
Policy Analysis	Conservation	Conservation	Conservation	Conservation	Livelihood and Conservation	Conservation	Livelihood	Conservation	Community Management Structure	Conservation	Conservation
Local Self Government	Yes	Yes	No	Yes	Yes	Yes	Yes	No	No	Yes	Yes
Participants	One male and one female from each household of village within 5 km. of	Village household	Member of land owning community	Willing people of adjoining villages	Adjoining villagers	Willing villagers	Household (one male and one female)	Poor families with at least one wage earner	---	Village forests	Economically backward people

Table A1: Inter-State Differences in JFM Schemes in India (Contd...)

Major issues of the resolution	Madhya Pradesh	Maharashtra	Nagaland	Orissa	Punjab	Rajasthan	Tamil Nadu	Tripura	Uttar Pradesh	Uttaranchal	West Bengal
	degraded forest (VFC); fringe village (FPC)										
Management Unit	Village	Watershed	Village	About 200 ha of forest land	Based on compartment lines or natural features	Maximum of 50 ha of one village	Hamlet/group of hamlets/ entire village to be chosen on watershed basis	500 ha for natural regeneration, 300 ha for plantation	---	Village/ hamlet	--
Executive Committee A) People's representation B) Gender Sensitivity	Minimum 2 women members (both for VFC and FPC), minimum 2 members from landless families (both for VFC and FPC) Minimum of 2 members	Village Head, 6 members of village society Minimum of 2 member	For non government land- 2 members from land owning community; Government land- 3 members from participating community No	6-8 members (atleast 1 SC, 1 woman and 1 ex-servicemen or a retired/ serving government employee) 20% women representation	Not exceeding 3 (atleast 1 SC, 1 woman and 1 ex-servicemen or a retired/ serving government employee) Minimum of 1 woman member	--- No	Minimum 5 and maximum 15 elected members – Panchayat members Minimum of 1 women member	Elected representatives not exceeding five No	Will be constituted as per the sub-section of Section 29 of the Untied Provinces Panchayat Raj Act, 1947 Includes representation for women Pradhans	Chairman from Village or hamlet, one SC/ST two general representative Two women representatives	6 elected representatives. Ban-o-Bhumi sanskar sthayee samiti and panchayat representative No
C) FD representation	Beat Guard/ Forester (both for VFC and FPC)	Forester	Non government land-Forester/ Forest Guard Government land-Range/Beat Officer	Forester/ Forest Guard	Forest Guard	---	Forest Ranger	Beat Officers	---	Forester/ forest guard	Beat Officer/ Deputy Range Manager
D) Others	Resident Teacher (both for VFC and FPC)	Gram Sevak, NGO	SDO (Civil) or EAC to be appointed by DC	NGO	---	---	NGO, representative of development department	---	---	Gram Pradhan of the village	---
Tenure of Committee	One year (VFC); (FPC)	One year	Five years	Two years	---	---	Five years	One year	---	---	One year

Table A1: Inter-State Differences in JFM Schemes in India (Contd...)

Major issues of the resolution	Madhya Pradesh	Maharashtra	Nagaland	Orissa	Punjab	Rajasthan	Tamil Nadu	Tripura	Uttar Pradesh	Uttaranchal	West Bengal
Committee registered under Societies/ Coop Acts	No	---	No	No	No	Yes	---	No	---	---	No
Power of Committee A) Punish/line	Yes (VFC) Yes (VPC)	No	---	Committee may lessen or cancel share of a household, if it has not yet discharged its duties	---	---	Yes	No	Yes	Controls illicit felling/seize weapons, compound forest offences	---
B) Cancel membership	Yes (VFC), Yes (FPC)	No	---	No	---	---	Yes	No	Yes	---	---
C) Frame rules	-(VFC); (FPC)	Yes	---	Yes	---	---	---	No	Yes	---	---
D) Distribute benefits	-(VFC); (FPC)	---	---	Yes	Yes	---	Yes	No	Yes	Effect local sales of forest produce Sell NTFPs other than sal seed and cane	---
Power of Forest Department A) Cancel membership	Yes (VFC); Yes (FPC)	Yes	Yes	Yes	---	---	Yes	Yes	---	District Collector has the right to suspend a member	Yes
B) Dissolve FPC	Yes (VFC); No (FPC)	Yes	Yes	Yes	---	Yes	Yes	Yes	---	District Collector has the right to dissolve	Yes
Share of members A) Fuel wood, NTFP, others	All non nationalized NTFO including bamboo-free of cost, collection rights for nationalized NTFP and	All NTFP except tendu and cashew – free of cost, other forest produce will be made available at 50% of market value	--	Leaf, fodder, thatch grass, broom grass, brushwood, fallen lops/tops/ twigs-free of cost; leased out NTFP collected	All NTFP for self consumption; except bhabbar grass and fodder grasses-auctioned to local people	All NTFP (except bamboo) free of cost; collection according to management plan	Provide free of cost for self consumption; grazing dependant – on carrying capacity free of cost	All MFPS, fuel wood, etc. free of cost; produce from thinning-for domestic consumption surplus will be sold	50% of the proceeds of the sale of forest product to a maximum of Rs.50, 000 per year (after deducting cost of	Use and sell NTFPs other than sal seeds and cane, effect local sales of forest produce	Cashew-25%, sal seed, tendu leaf, honey, wax on approved tariff, rest free

Table A1: Inter-State Differences in JFM Schemes in India (Contd...)

Major issues of the resolution	Madhya Pradesh	Maharashtra	Nagaland	Orissa	Punjab	Rajasthan	Tamil Nadu	Tripura	Uttar Pradesh	Uttaranchal	West Bengal
	30% income from fuel wood obtained from main felling (for VFC members); Forest based bonafide usufruct requirement of members without charging any royalty (for FPC members) e.g. Bamboo			against prescribed wages	at cheaper rates				investment); Of the remaining 50% is distributed to village community, 50% for community work.		
B) Timber	30% income from timber, obtained from main felling (for VFC members)	50% to be auctioned, 50% proceeds after deducting taxes will be paid in cash to members	Non government land-FD get royalty at current rates Government land-20% to participating community	50% of the total produce	All revenue from private and community forests will go to the owners; not mentioned about Government forests	60% of net income after deducting Government expense	The sale proceeds will be distributed equitability among the members of VFC, after remitting 25% to village development fund	50% of net receipt of sale from silvicultural thinning and from main felling	---		25% of net income except in North Bengal, Darjeeling Hill Gorkha area
State level Coordination/ Steering/ Working group	No	Yes	Yes	Yes	No	No	No	No	---	Yes	No

Source: SPWD (1992) and (1998)

The following papers have been published so far:

- | | | |
|--------|--|--|
| No. 1 | Ulrike Grote,
Arnab Basu,
Diana Weinhold | Child Labor and the International Policy Debate
Zentrum für Entwicklungsforschung (ZEF), Bonn,
September 1998, pp. 47. |
| No. 2 | Patrick Webb,
Maria Iskandarani | Water Insecurity and the Poor: Issues and Research Needs
Zentrum für Entwicklungsforschung (ZEF), Bonn,
Oktober 1998, pp. 66. |
| No. 3 | Matin Qaim,
Joachim von Braun | Crop Biotechnology in Developing Countries: A
Conceptual Framework for Ex Ante Economic Analyses
Zentrum für Entwicklungsforschung (ZEF), Bonn,
November 1998, pp. 24. |
| No. 4 | Sabine Seibel,
Romeo Bertolini,
Dietrich Müller-Falcke | Informations- und Kommunikationstechnologien in
Entwicklungsländern
Zentrum für Entwicklungsforschung (ZEF), Bonn,
January 1999, pp. 50. |
| No. 5 | Jean-Jacques Dethier | Governance and Economic Performance: A Survey
Zentrum für Entwicklungsforschung (ZEF), Bonn,
April 1999, pp. 62. |
| No. 6 | Mingzhi Sheng | Lebensmittelhandel und Kosumtrends in China
Zentrum für Entwicklungsforschung (ZEF), Bonn,
May 1999, pp. 57. |
| No. 7 | Arjun Bedi | The Role of Information and Communication Technologies
in Economic Development – A Partial Survey
Zentrum für Entwicklungsforschung (ZEF), Bonn,
May 1999, pp. 42. |
| No. 8 | Abdul Bayes,
Joachim von Braun,
Rasheda Akhter | Village Pay Phones and Poverty Reduction: Insights from
a Grameen Bank Initiative in Bangladesh
Zentrum für Entwicklungsforschung (ZEF), Bonn,
June 1999, pp. 47. |
| No. 9 | Johannes Jütting | Strengthening Social Security Systems in Rural Areas of
Developing Countries
Zentrum für Entwicklungsforschung (ZEF), Bonn,
June 1999, pp. 44. |
| No. 10 | Mamdouh Nasr | Assessing Desertification and Water Harvesting in the
Middle East and North Africa: Policy Implications
Zentrum für Entwicklungsforschung (ZEF), Bonn,
July 1999, pp. 59. |
| No. 11 | Oded Stark,
Yong Wang | Externalities, Human Capital Formation and Corrective
Migration Policy
Zentrum für Entwicklungsforschung (ZEF), Bonn,
August 1999, pp. 17. |

- No. 12 John Msuya Nutrition Improvement Projects in Tanzania: Appropriate Choice of Institutions Matters
Zentrum für Entwicklungsforschung (ZEF), Bonn,
August 1999, pp. 36.
- No. 13 Liu Junhai Legal Reforms in China
Zentrum für Entwicklungsforschung (ZEF), Bonn,
August 1999, pp. 90.
- No. 14 Lukas Menkhoff Bad Banking in Thailand? An Empirical Analysis of Macro Indicators
Zentrum für Entwicklungsforschung (ZEF), Bonn,
August 1999, pp. 38.
- No. 15 Kaushalesh Lal Information Technology and Exports: A Case Study of Indian Garments Manufacturing Enterprises
Zentrum für Entwicklungsforschung (ZEF), Bonn,
August 1999, pp. 24.
- No. 16 Detlef Virchow Spending on Conservation of Plant Genetic Resources for Food and Agriculture: How much and how efficient?
Zentrum für Entwicklungsforschung (ZEF), Bonn,
September 1999, pp. 37.
- No. 17 Arnulf Heuermann Die Bedeutung von Telekommunikationsdiensten für wirtschaftliches Wachstum
Zentrum für Entwicklungsforschung (ZEF), Bonn,
September 1999, pp. 33.
- No. 18 Ulrike Grote,
Arnab Basu,
Nancy Chau The International Debate and Economic Consequences of Eco-Labeling
Zentrum für Entwicklungsforschung (ZEF), Bonn,
September 1999, pp. 37.
- No. 19 Manfred Zeller Towards Enhancing the Role of Microfinance for Safety Nets of the Poor
Zentrum für Entwicklungsforschung (ZEF), Bonn,
October 1999, pp. 30.
- No. 20 Ajay Mahal,
Vivek Srivastava,
Deepak Sanan Decentralization and Public Sector Delivery of Health and Education Services: The Indian Experience
Zentrum für Entwicklungsforschung (ZEF), Bonn,
January 2000, pp. 77.
- No. 21 M. Andreini,
N. van de Giesen,
A. van Edig,
M. Fosu,
W. Andah Volta Basin Water Balance
Zentrum für Entwicklungsforschung (ZEF), Bonn,
March 2000, pp. 29.
- No. 22 Susanna Wolf,
Dominik Spoden Allocation of EU Aid towards ACP-Countries
Zentrum für Entwicklungsforschung (ZEF), Bonn,
March 2000, pp. 59.

- No. 23 Uta Schultze Insights from Physics into Development Processes: Are Fat Tails Interesting for Development Research?
Zentrum für Entwicklungsforschung (ZEF), Bonn,
March 2000, pp. 21.
- No. 24 Joachim von Braun,
Ulrike Grote,
Johannes Jütting Zukunft der Entwicklungszusammenarbeit
Zentrum für Entwicklungsforschung (ZEF), Bonn,
March 2000, pp. 25.
- No. 25 Oded Stark,
You Qiang Wang A Theory of Migration as a Response to Relative Deprivation
Zentrum für Entwicklungsforschung (ZEF), Bonn,
March 2000, pp. 16.
- No. 26 Doris Wiesmann,
Joachim von Braun,
Torsten Feldbrügge An International Nutrition Index – Successes and Failures in Addressing Hunger and Malnutrition
Zentrum für Entwicklungsforschung (ZEF), Bonn,
April 2000, pp. 56.
- No. 27 Maximo Torero The Access and Welfare Impacts of Telecommunications Technology in Peru
Zentrum für Entwicklungsforschung (ZEF), Bonn,
June 2000, pp. 30.
- No. 28 Thomas Hartmann-
Wendels
Lukas Menkhoff Could Tighter Prudential Regulation Have Saved Thailand's Banks?
Zentrum für Entwicklungsforschung (ZEF), Bonn,
July 2000, pp. 40.
- No. 29 Mahendra Dev Economic Liberalisation and Employment in South Asia
Zentrum für Entwicklungsforschung (ZEF), Bonn,
August 2000, pp. 82.
- No. 30 Noha El-Mikawy,
Amr Hashem,
Maye Kassem,
Ali El-Sawi,
Abdel Hafez El-Sawy,
Mohamed Showman Institutional Reform of Economic Legislation in Egypt
Zentrum für Entwicklungsforschung (ZEF), Bonn,
August 2000, pp. 72.
- No. 31 Kakoli Roy,
Susanne Ziemek On the Economics of Volunteering
Zentrum für Entwicklungsforschung (ZEF), Bonn,
August 2000, pp. 47.
- No. 32 Assefa Admassie The Incidence of Child Labour in Africa with Empirical Evidence from Rural Ethiopia
Zentrum für Entwicklungsforschung (ZEF), Bonn,
October 2000, pp. 61.
- No. 33 Jagdish C. Katyal,
Paul L.G. Vlek Desertification - Concept, Causes and Amelioration
Zentrum für Entwicklungsforschung (ZEF), Bonn,
October 2000, pp. 65.

- No. 34 Oded Stark On a Variation in the Economic Performance of Migrants by their Home Country's Wage
Zentrum für Entwicklungsforschung (ZEF), Bonn,
October 2000, pp. 10.
- No. 35 Ramón Lopéz Growth, Poverty and Asset Allocation: The Role of the State
Zentrum für Entwicklungsforschung (ZEF), Bonn,
March 2001, pp. 35.
- No. 36 Kazuki Taketoshi Environmental Pollution and Policies in China's Township and Village Industrial Enterprises
Zentrum für Entwicklungsforschung (ZEF), Bonn,
March 2001, pp. 37.
- No. 37 Noel Gaston,
Douglas Nelson Multinational Location Decisions and the Impact on Labour Markets
Zentrum für Entwicklungsforschung (ZEF), Bonn,
May 2001, pp. 26.
- No. 38 Claudia Ringler Optimal Water Allocation in the Mekong River Basin
Zentrum für Entwicklungsforschung (ZEF), Bonn,
May 2001, pp. 50.
- No. 39 Ulrike Grote,
Stefanie Kirchhoff Environmental and Food Safety Standards in the Context of Trade Liberalization: Issues and Options
Zentrum für Entwicklungsforschung (ZEF), Bonn,
June 2001, pp. 43.
- No. 40 Renate Schubert,
Simon Dietz Environmental Kuznets Curve, Biodiversity and Sustainability
Zentrum für Entwicklungsforschung (ZEF), Bonn,
October 2001, pp. 30.
- No. 41 Stefanie Kirchhoff,
Ana Maria Ibañez Displacement due to Violence in Colombia: Determinants and Consequences at the Household Level
Zentrum für Entwicklungsforschung (ZEF), Bonn,
October 2001, pp. 45.
- No. 42 Francis Matambalya,
Susanna Wolf The Role of ICT for the Performance of SMEs in East Africa – Empirical Evidence from Kenya and Tanzania
Zentrum für Entwicklungsforschung (ZEF), Bonn,
December 2001, pp. 30.
- No. 43 Oded Stark,
Ita Falk Dynasties and Destiny: On the Roles of Altruism and Impatience in the Evolution of Consumption and Bequests
Zentrum für Entwicklungsforschung (ZEF), Bonn,
December 2001, pp. 20.
- No. 44 Assefa Admassie Allocation of Children's Time Endowment between Schooling and Work in Rural Ethiopia
Zentrum für Entwicklungsforschung (ZEF), Bonn,
February 2002, pp. 75.

ZEF Discussion Papers on Development Policy

- No. 45 Andreas Wimmer,
Conrad Schetter Staatsbildung zuerst. Empfehlungen zum Wiederaufbau und zur Befriedung Afghanistans. (German Version)
State-Formation First. Recommendations for Reconstruction and Peace-Making in Afghanistan. (English Version)
Zentrum für Entwicklungsforschung (ZEF), Bonn,
April 2002, pp. 27.
- No. 46 Torsten Feldbrügge,
Joachim von Braun Is the World Becoming A More Risky Place?
- Trends in Disasters and Vulnerability to Them –
Zentrum für Entwicklungsforschung (ZEF), Bonn,
May 2002, pp. 42
- No. 47 Joachim von Braun,
Peter Wobst,
Ulrike Grote “Development Box” and Special and Differential Treatment for
Food Security of Developing Countries:
Potentials, Limitations and Implementation Issues
Zentrum für Entwicklungsforschung (ZEF), Bonn,
May 2002, pp. 28
- No. 48 Shyamal Chowdhury Attaining Universal Access: Public-Private Partnership and
Business-NGO Partnership
Zentrum für Entwicklungsforschung (ZEF), Bonn,
June 2002, pp. 37
- No. 49 L. Adele Jinadu Ethnic Conflict & Federalism in Nigeria
Zentrum für Entwicklungsforschung (ZEF), Bonn,
September 2002, pp. 45
- No. 50 Oded Stark,
Yong Wang Overlapping
Zentrum für Entwicklungsforschung (ZEF), Bonn,
August 2002, pp. 17
- No. 51 Roukayatou Zimmermann,
Matin Qaim Projecting the Benefits of Golden Rice in the Philippines
Zentrum für Entwicklungsforschung (ZEF), Bonn,
September 2002, pp. 33
- No. 52 Gautam Hazarika,
Arjun S. Bedi Schooling Costs and Child Labour in Rural Pakistan
Zentrum für Entwicklungsforschung (ZEF), Bonn
October 2002, pp. 34
- No. 53 Margit Bussmann,
Indra de Soysa,
John R. O Neal The Effect of Foreign Investment on Economic Development
and Income Inequality
Zentrum für Entwicklungsforschung (ZEF), Bonn,
October 2002, pp. 35
- No. 54 Maximo Torero,
Shyamal K. Chowdhury,
Virgilio Galdo Willingness to Pay for the Rural Telephone Service in
Bangladesh and Peru
Zentrum für Entwicklungsforschung (ZEF), Bonn,
October 2002, pp. 39
- No. 55 Hans-Dieter Evers,
Thomas Menkhoff Selling Expert Knowledge: The Role of Consultants in
Singapore’s New Economy
Zentrum für Entwicklungsforschung (ZEF), Bonn,
October 2002, pp. 29

ISSN: 1436-9931

The papers can be ordered free of charge from:

Zentrum für Entwicklungsforschung (ZEF)
Center for Development Research
Walter-Flex-Str. 3
D – 53113 Bonn, Germany

Phone: +49-228-73-1861
Fax: +49-228-73-1869
E-Mail: zef@uni-bonn.de
<http://www.zef.de>