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Rural Women, Poverty and Natural Resources Sustenance, Sustainability and Struggle for Change

Bina Agarwal

Women in poor rural households are burdened with a significant responsibility for family subsistence and are important, often the primary, and in many female-headed households the sole economic providers. However, their ability to fulfil this responsibility is significantly constrained by the limited (and declining) resources and means at their command—a constraint that stems not merely from their class position but also from gender. These gender inequities in access to resources take varying forms: intra-family differences in the distribution of basic necessities; women's systematically disadvantaged position in the labour market; their little access to the crucial means of production—land, and associated production technology; and the growing deterioration and privatisation of the country's common property resources on which the poor in general and women in particular, depend in substantial degree for sustenance. At the same time, the women are not always passive victims—many have reacted against their marginalisation and are today significant actors in grassroots initiatives for change. In particular, in response to a growing crisis of survival, poor peasant and tribal women have emerged in the forefront of many ecology initiatives. These initiatives, which have developed into movements in several areas, articulate a growing resistance to existing approaches to development, and call attention to the critical need for an alternative approach which is regenerative rather than destructive of nature—a necessary condition for its sustainability in the long run. Indeed, the perspectives and insights offered by such movements, and women as important participants in them, need to be an integral part of any attempt to chart out an alternative.

THE history of rural women's relationship to nature's resources has been marked by a struggle to provide for family subsistence, in the face of a growing alienation from, and an increasing erosion of the means to do so. Women are noted to have been the first farmers, potters and weavers. In hunting-gathering societies, Childe [1942:65] notes: "to accomplish the neolithic revolution . . . womankind had not only to discover suitable plants and appropriate methods for their cultivation but must also devise special implements for tilling the soil, reaping and storing the crop and converting it into food." Technologies such as the digging stick (used to dig out tubers and wild plants, and precursor to the plough), hoe, the saucer-shaped stone for grinding grain, baskets and vessels for grain storage, jars, jugs, strainers and beakers for holding water and fermented liquor, the oven for baking bread, and the loom, are all attributed to women, as are techniques such as hoeing, winnowing, making bread (involving some knowledge of biochemistry), spinning and weaving, and the chemistry of pot making [Childe, 1942]. Food gathering itself demanded an elaborate knowledge of the food and medicinal properties of plants, roots and trees—including a wide *reserve* knowledge of edible plants not normally used, but critical to tide over prolonged shortages of other foods during climatic disasters [Boulding, 1976]. Women collected edible seeds of wild grasses, ancestral to our wheat and barley, and to them is attributed the decisive step of deliberately sowing such seeds on suitable soil, and cultivating the sown land by weeding and other measures [Childe, 1942]. Indeed it is women's daily activities that are assessed to have sustained the family, male hunting typically being a supplementary, less

dependable and more risky source of food supply.¹

Women's ability to provide and sustain depended, however, on their direct access to nature's resources, and control over technology and their own labour; and the history of this early period is also the history of the systematic undermining of women's autonomy as agricultural producers in many parts of the globe. The process by which this shift from autonomy to dependence took place was clearly complex and is still being reconstructed and debated by both feminist and other scholars.² This paper does not seek to enter that debate. Rather it examines gender-related differences in the distribution of responsibilities and resources for survival within poor rural households in the Indian context today.

It is argued here that women in such households are burdened with a significant responsibility for family subsistence and are important, often the primary, and in many female-headed households the sole economic providers. However, their ability to fulfil this responsibility is significantly constrained by the limited (and declining) resources and means at their command—a constraint that stems not merely from their class position but also from gender. These gender inequities in access to resources take varying forms: intra-family differences in the distribution of basic necessities; women's systematically disadvantaged position in the labour market; their little access to the crucial means of production—land, and associated production technology; and the growing deterioration and privatisation of the country's common property resources on which the poor in general and women in particular, depend in substantial degree for sustenance. At the same time, the women are

not always passive victims—many have reacted against their marginalisation and are today significant actors in grassroots initiatives for change. In particular, in response to a growing crisis of survival, poor peasant and tribal women have emerged in the forefront of many ecology initiatives. These initiatives, which have developed into movements in several areas, articulate a growing resistance to existing approaches to development, and call attention to the critical need for an alternative approach which is regenerative rather than destructive of nature—a necessary condition for its sustainability in the long run. Indeed, the perspectives and insights offered by such movements, and women as important participants in them, need to be an integral part of any attempt to chart out an alternative.

The paper is divided into six sections: Section I focuses on the gender-based inequalities in the distribution of food and health care within poor households that can endanger female survival itself, and which would necessitate directing resources specifically at women and female children. Section II examines gender inequalities in access to employment opportunities (and changes therein with technological shifts), and explores the links between these inequalities and the intra-household gender discriminatory practices noted in Section I. Section III, on the basis of ethnographic evidence from across India, highlights women's unequal and declining access to land, and outlines some of the barriers they face, especially under conditions of poverty, both in laying claim to and in directly controlling and self-cultivating land. Section IV focuses on the escalating ecological degradation in India today and its disproportionate burden borne by poor women.

Section V examines women's responses at the grass-roots level to existing gender inequalities and trends in development. It also focuses on the close interlinks between the economic and social/cultural dimensions of women's subordination as revealed in these responses. The concluding section highlights the critical need for a shift towards an alternative development path and the wide-ranging parameters that would be involved in any such shift.

I

Intra-Household Gender Inequalities in Access to Basic Necessities

Does the burden of rural poverty fall equally on women and men? In particular does it fall equally on female and male members of poor households? In much of the 'poverty literature' in India, neither at the level of general discussion, nor in attempts to estimate poverty, are these questions typically addressed. Essentially it is assumed that all members of a poor household are poor, and further that they are all equally poor.

However, there are substantive reasons for querying the assumption (implicit in most anti-poverty programmes) that incomes or assets that may render the household as a unit less susceptible to poverty, will automatically, and in equal degree, provide this protection to all family members, including the female. There is, for instance, growing evidence of (a) gender-based inequalities in the distribution of resources, especially those that go towards fulfilling basic needs such as food and health care; (b) noteworthy gender differences in household spending patterns, with women's earnings much more than men's in poor households going towards the family's basic needs; and (c) of the association of children's nutritional status under poverty conditions being much more closely linked to the mother's earnings than the father's. In other words, the risk of poverty and physical well-being of a woman and her children could depend critically on whether or not she has direct access to income or productive assets such as land and not just access mediated through the husband or male kin. The evidence is briefly outlined below.

To begin with, the data reveals systematically lower survival chances of women and female children as well as survival in a poorer state of health. Female life expectancy has been below male since the 1920s, with differentials increasing consistently between 1921 and 1970 with some closing of the gap since then (Table 1). The sex ratio has been declining since the turn of the century (the slight improvement over the past decade not necessarily reflecting a change in the long-run trend), with the ratio being adverse across all states except Kerala, although more so in the north-west than the south (Table 2). Mortality rates, again, are higher for

females than males except in the southern states where they approach parity.

Existing evidence is again fairly consistent on gender differentials in morbidity and unambiguous on the greater neglect of females in health care and the treatment of illness. Most rural health surveys record a much higher incidence of illness among women and girls than men and boys.³ When ill, more females than males receive no treatment or, if treated, less is spent on their medical care [Dandekar, 1975]. Fewer female than male children receive aid in the first 24 hours of their terminal illness [Taylor and Faruque, 1983]. Female ailments are typically ignored and medical help sought only when the disease is chronic or serious [Khan et al, 1983; Chatterjee, 1983; Miller, 1981]. Hospital admissions data reveals the same bias [Kynch and Sen, 1983; Ghosh, 1985].⁴ Women in poor households often hide their sickness in order not to disrupt housework or wage labour, to save on medical expenses, or out of shyness [Khan et al, 1983]. During epidemics of plague and influenza too mortality has been found to be higher for females than males [Kynch, 1987].

Much more controversial, however, is the issue of discrimination in intra-household food allocation as revealed in measures of actual food intakes (adjusted by ICMR recommendations or some other measure of requirements), or by anthropometric indices. A survey of existing evidence by Harriss [1986] indicates (a) gender discrimination in intakes of micronutrients (vitamins and minerals) via food allocation in both north and south India, especially among adolescent girls, adult women (particularly if pregnant or lactating) and female children; and (b) gender discrimination in intakes of macronutrients (calories and proteins) among both poor and non-poor households in parts of north India, but only among very poor households in the south, the differentials being most pronounced among the very young⁵ and very old females, and women when pregnant and lactating (which would cover a substantial part of the life span for most rural women). They are also more pronounced among the poor than the non-poor.⁶ Malnutrition again is noted to be higher among girls than boys during crisis, as found for the 1978 West Bengal floods [Sen, 1981]. In other words, while the nutritional data reviewed by Harriss does not show gender discrimination in food allocation as a *universal* feature, it does indicate a considerable discrimination by region (especially north India) and social grouping (especially the poor). The factors underlying this inter-regional variation in extent of discrimination against females are discussed in Section II. The point of relevance here is that entitlements directed at the level of the *household* [as advocated by Harriss, 1986] cannot be assumed to be shared fairly (in terms of requirements) among all family members.⁷

Further, despite disadvantaged earning conditions (discussed in Section II), women in poor households often contribute substantially to family income and at times more than their husbands, even if we take account only of earned income. For instance, on the basis of diaries kept by women of landless and marginal landholding labour households, in 10 sample villages each in Tamil Nadu and Kerala, Mencher [1987]; (also Table 3), taking the weighted average per village, finds that:

- (a) Although the wife's earnings from agricultural wage work were typically about half or two-thirds of the husband's, her contribution to household maintenance was greater than his in 6 of the 20 sample villages, equal or close to equal in 5 others, and substantial in the rest. [This was also found in two West Bengal villages analysed by Mencher and Saradmoni, 1982.]
- (b) In all cases the proportion contributed by the wife from her income was greater

TABLE 1: LIFE EXPECTANCY AT BIRTH BY SEX FOR ALL INDIA (1901-10 TO 1976-80)

Period	Life Expectancy at Birth (Years)		
	Males	Females	Differences*
1901-1910	22.6	23.3	0.7
1911-1920	19.4	20.9	1.5
1921-1930	26.9	26.6	-0.3
1931-1940	32.1	31.4	-0.7
1941-1950	32.4	31.7	-0.8
1951-1960	41.9	40.6	-1.3
1961-1970	46.4	44.7	-1.7
1970-1975**	50.5	49.0	-1.5
1976-1980**	52.5	52.1	-0.4

Notes: * Female minus male life expectancy.

** Based on SRS data; rest based on census data.

Source: Sample Registration System (SRS) 1979-80. Office of the Registrar General, Government of India.

TABLE 2: SEX RATIO (FEMALES PER 1000 MALES), INDIA

Year	All India		State-wise	
	Sex Ratio	State	State	Sex Ratio (1981)
1901	972	Kerala		1032
1911	964	Orissa		981
1921	955	Tamil Nadu		977
1931	950	Andhra Pradesh		975
1941	945	Karnataka		963
1951	946	Bihar		946
1961	941	Gujarat		942
1971	930	Madhya Pradesh		941
1981	933	Maharashtra		937
		Rajasthan		919
		West Bengal		911
		Assam		901
		Jammu and Kashmir		892
		Uttar Pradesh		885
		Punjab		879
Haryana		870		

Source: Census of India [1981a: 4, 5], series 1, paper 2 of 1983.

than that by the husband from his: typically she contributed over 90 per cent of her earnings, while the husband rarely gave over 60-75 per cent of his, and sometimes even less.

- (c) The minimum contributed by all household males was less than by all females in 13 of the 20 villages, although the maximum contributed by all males was typically more.

It is noteworthy that these contributions do not include the value of items such as fuel, fodder, food, etc gathered from the village commons and forests by female members (described in Section IV).

This indicates a considerable siphoning off of male income for their personal consumption. Usually this is spent on liquor, tobacco, pan (betel leaf), clothes, etc, while women's limited expenditure on themselves is observed to be on bus fares to work, or a mid-day meal where food is not provided by the employers [Mencher, 1987]. Gender differences in spending patterns have been noted too in several other studies relating to various parts of the country.⁸ Even in slack seasons, when household earnings are low, men may withhold a part of their incomes; and, when unemployed, may still extract money for liquor from their wives under threat of beatings. Borrowing against the wife's anticipated earnings or pawning her jewellery to sustain the household may also be resorted to [Mies et al, 1983].

Earning an income of course does not guarantee control over it; and employers have been found to sometimes pay wages directly to the man when the husband and wife are working together [Chakravarty and

Tiwari, 1977]. But clearly the chances of such control are greater than where women have no independent earnings; and systematically collected data by Mencher and Saradmoni for Tamil Nadu and Kerala, show that in 18 out of their 20 sample villages, over half the women kept their earnings [Mencher, 1987].

Additionally, as a corollary to the above, research findings such as those from Kerala show that in agricultural labour families, children's nutritional status is much more closely linked to the mother's earnings than the father's [Kumar, 1978, Gulati, 1978].

The importance of women's direct access to entitlements is of course self-evident in the case of female-headed households, especially those with no adult male workers and where women are often the sole earners. By census estimates these constitute about 10 per cent of all households in the country, comprising essentially those widowed, divorced, deserted or separated, although estimates of *de facto* female heads (that is, including those whose husbands have out-migrated, or are invalid, etc) are estimated to be 18 per cent or more [Youssef and Hetler, 1988]. Region-specific studies further indicate that female-headed households constitute the highest percentage of the bottom-most income decile of rural households—the poorest of the poor [Visaria and Visaria, 1985; Parthasarthy, 1983].

It is important to mention here that quite apart from their contributions in terms of earnings is the sheer *time* contribution of poor rural women to a complex range of unpaid tasks—fetching, gathering, foraging, cooking, processing, conserving, minister-

ing, and the building up of kin networks and inter-household relationships in the village, which often prove critical for family survival during periods of food shortages associated with seasonal troughs and even drought [Agarwal, 1988a]. While not all of these activities can be quantified, time allocation studies from across the country yet show that women of this class put in long hours of work, often longer than by men, especially but not only when domestic work is counted [Jain and Chand, 1982; Khan et al 1983; Dasgupta and Maiti, 1986; Kar, 1982; Sen, 1988].

Essentially, therefore, women of poor rural households (whether male- or female-headed) bear a significant responsibility for family subsistence. However the fulfilment of this responsibility is strongly constrained not only by the noted unequal sharing of household resources, but also by their unequal access to earning opportunities and to agricultural land, and by the decline in common property resources and forests. Consider these in turn in the sections that follow.

II

Gender Differentials in Earning Opportunities and Conditions of Work

In 1983, by the National Sample Survey (NSS) 'usual status' criterion, of the rural women workers of over 5 years of age, 35 per cent were employed as casual labour on a daily or piece rate basis and only 3 per cent were in regular employment (wage or

TABLE 3: RELATIVE CONTRIBUTIONS BY MALES AND FEMALES TO HOUSEHOLD MAINTENANCE

(Rs per year)

State/Village	Wife			Husband			Proportion of Wife's to Husband's		All Females		All Males		Ratio of All Males to All Females C
	E	C	C/E	E	C	C/E	E	C	Max C	Min C	Max C	Min C	
Kerala													
Cannanore-1	1138	962	0.85	1954	1249	0.64	0.58	0.77	1924	500	2935	211	1:0.79
Palghat-1	—	954	—	—	645	—	—	1.31	1394	361	2799	113	1:1.29
Palghat-2	1065	990	0.93	2039	1406	0.69	0.52	0.70	1606	104	3029	115	1:0.62
Malappuram-1	435	421	0.97	1219	1020	0.84	0.36	0.41	1333	101	3517	45	1:0.25
Trichur-1	—	467	—	—	377	—	—	1.24	1585	313	790	56	1:1.20
Trichur-2	786	688	0.88	1787	1294	0.72	0.44	0.53	1323	309	2824	380	1:0.56
Alleppey-1	752	691	0.92	748	569	0.76	1.01	1.21	1181	14	1072	49	1:1.30
Alleppey-2	530	438	0.83	743	541	0.73	0.71	0.81	600	211	970	137	1:0.77
Trivandrum-1	1027	938	0.91	2214	943	0.43	0.46	0.99	1371	370	1518	544	1:0.97
Trivandrum-2	1420	1209	0.85	2235	1141	0.51	0.64	1.06	1797	480	2165	317	1:1.16
Tamil Nadu													
Chingleput-1	—	301	—	—	155	—	—	1.94	1223	140	614	27	1:1.20
Chingleput-2	—	265	—	—	216	—	—	1.23	368	100	540	36	1:0.86
South Arcot-1	699	693	0.99	1449	1226	0.85	0.48	0.57	1040	164	1885	225	1:0.52
South Arcot-2	587	566	0.96	935	667	0.71	0.63	0.85	907	61	1330	41	1:0.71
Thanjavur-1	—	468	—	—	490	—	—	0.96	816	801	616	127	1:1.20
Thanjavur-2	759	756	1.00	1247	901	0.72	0.61	0.84	1510	80	1544	263	1:0.80
Tirunelveli-1	1173	1099	0.94	1653	1478	0.91	0.71	0.74	1997	428	4651	289	1:0.63
Madurai-1	564	556	0.99	1240	938	0.76	0.45	0.59	1072	184	1716	135	1:0.60
Kanya Kumari-1	—	369	—	—	365	—	—	1.01	577	204	1463	174	1:0.85
Kanya Kumari-2	599	570	0.95	1297	808	0.62	0.46	0.71	891	156	1681	399	1:0.61

Notes: Districts within each state are listed from north to south. The hyphen indicates villages where data on earnings were not collected.

E = Earnings; C = Contributions.

Source: Mencher [1987].

salaried, especially domestic service), compared to the male workers of whom 29 per cent were casual labourers and 10 per cent in regular employment—the percentages in self-employment being roughly the same for both sexes [NSSO, 1983]. Also while the dependence on wage work has been increasing for both men and women, the increase has been greater for women: by census figures, in 1961, 25.6 per cent of rural female workers and 16.2 per cent of rural male workers were agricultural labourers; by 1981 the figures for women and men had increased to 49.6 per cent and 24.3 per cent respectively, namely, a *doubling* in two decades of rural women's dependence on agricultural wage work as their main source of earnings. Similarly, according to the Rural Labour Enquiries (RLEs) of 1964-65 and 1974-75, while the proportion of all agricultural labour households to all rural households increased from 21.7 per cent to 25.3 per cent and alongside this the members of both male and female agricultural labourers in agricultural labour households also increased, the percentage increase was greater for women (57.5 per cent) than men (43.6 per cent). A close positive correspondence has been noted between the ranks of regions (the RLEs divide India into 5 geo-regions) in terms of the growth in numbers of female agricultural labour over the two survey years, and their ranks in terms of changes in the incidence of poverty over the same period [Chatterjee, 1982]. Also, the highest increase in numbers has been in the eastern region (Bihar, Orissa and West Bengal) where the absolute incidence of rural poverty is the most as well.

The RLEs are also a valuable source of information on gender differences in employment and earnings across regions, as well as on changes in these over time during the initial phase of the green revolution (although unfortunately, comparable data for the more recent period are not available). These indicate that employment creation with the green revolution technology has been inadequate to absorb the growing numbers seeking agricultural wage work. Gender-wise tables 4 and 5 show that:

—in both survey years the average number of days of annual employment were lower and the average number of days not worked during the year due to want of work were higher for women than men in all the states;

—over the ten-year period, the average number of days of employment decreased for both women and men at the all-India level and in most states, while the days of involuntary unemployment increased for both sexes in almost all the states, the increase being more for women than men.

Differential labour demand along with differential wages (often even for the same tasks), with women's daily real earnings being less than three-fourths of men's in virtually all states in both RLE years, make for

significant gender differences in *annual real earnings*, as presented in Table 6. Female annual earnings are consistently lower than male in both years, being less than half in 5 out of the 14 states examined, and close to half in most of the others in 1974-75.⁹ Also, over the period, while real earnings have declined for both sexes in most states,¹⁰ in six states the decline has been more for women. These include the high agricultural growth states, such as Punjab

and Gujarat, as well as the states of eastern India with poor agricultural performance. In general, the absolute differentials are higher in the north-west than elsewhere, and highest in the Punjab. When the total wage earnings (including from non-agricultural work) were computed, the gender differentials were even greater in both years, with cross-regional changes in differentials over the period being very similar to those observed for agricultural earnings alone. On the

TABLE 4: EMPLOYMENT OF AGRICULTURAL LABOURERS IN AGRICULTURAL LABOUR HOUSEHOLDS BY STATES

Region/State	Average Annual Full Days of Agricultural Wage Work					
	Women			Men		
	1964-65	1974-75	Change	1964-65	1974-75	Change
North-Western						
Haryana		131	-42		203	-79
Punjab	173	170	-3	282	233	-49
Rajasthan	153	163	+10	210	239	+29
Uttar Pradesh	102	124	+22	189	200	+11
Western						
Gujarat	240	160	-80	278	206	-72
Maharashtra	183	180	-3	239	221	-18
Central						
Madhya Pradesh	147	125	-22	212	198	-14
Eastern						
Bihar	127	114	-13	198	186	-12
Orissa	165	111	-54	224	164	-60
West Bengal	216	147	-69	269	210	-59
Southern						
Andhra Pradesh	104	138	+34	204	193	-11
Karnataka	192	175	-17	228	204	-24
Kerala	147	108	-39	173	138	-35
Tamil Nadu	146	118	-28	194	148	-46
All India	149	138	-11	217	193	-24

Source: Government of India [1981: 140, 143], Tables 3.3(a).1M and 3.3(a).1W

TABLE 5: UNEMPLOYMENT AMONG AGRICULTURAL LABOURERS IN AGRICULTURAL LABOUR HOUSEHOLDS BY STATES

Region/State	Average Annual Days Not Worked Due to Want of Work					
	Women			Men		
	1964-65	1974-75	Change	1964-65	1974-75	Change
North-Western						
Haryana		88	+29		88	+61
Punjab	59	111	+52	27	64	+37
Rajasthan	81	97	-16	41	49	+8
Uttar Pradesh	108	114	+6	35	57	+22
Western						
Gujarat	82	111	+29	44	67	+23
Maharashtra	44	90	+46	32	57	+25
Central						
Madhya Pradesh	75	141	+66	27	70	+43
Eastern						
Bihar	103	155	+52	70	90	+20
Orissa	105	158	+53	40	92	+52
West Bengal	73	166	+93	37	88	+51
Southern						
Andhra Pradesh	99	103	+4	16	61	+45
Karnataka	8	81	+73	44	58	+14
Kerala	120	162	+42	106	126	+20
Tamil Nadu	155	142	-13	106	98	-8
All India	96	124	+28	48	76	+28

Source: Government of India [1981: 206, 212], Tables 3.6(a).1M, 3.6(a).1W.

TABLE 6: ANNUAL REAL EARNINGS FROM AGRICULTURAL WAGE WORK OF AGRICULTURAL LABOURERS IN AGRICULTURAL LABOUR HOUSEHOLDS (₹s)

Region/State	Annual Real Earnings Per Person				Differential Ratio of Female Earnings		Percentage of Rural Population in Poverty	
	Women		Men		1964-65	1974-75	1964-65	1974-75
	1964-65	1974-75	1964-65	1974-75				
North-Western								
Haryana		213.3		406.8		1.91		
Punjab	250.8	239.5	600.7	618.1*	2.39	2.58*	26.5	23.0
Rajasthan	166.8	150.2	369.6	310.7	2.22	2.07	31.8	29.8
Uttar Pradesh	94.9	133.2*	207.9	277.4*	2.19	2.08	53.7	47.3
Western								
Gujarat	285.6	168.0	408.7	278.1	1.43	1.66*	49.8	35.6
Maharashtra	140.9	114.3	351.3	241.2	2.49	2.11	59.1	49.8
Madhya Pradesh	126.4	114.1	235.3	162.9	1.86	1.43	42.1	52.3
Eastern								
Bihar	152.4	119.7	275.2	229.5	1.81	1.92*	54.3	58.4
Orissa	146.8	73.1	297.9	155.7	2.03	2.13*	61.9	58.0
West Bengal	293.8	167.1	486.9	294.3	1.66	1.76*	64.0	66.0
Southern								
Andhra Pradesh	88.4	104.8*	246.8	198.2	2.79	1.89	41.5	39.8
Karnataka	151.7	134.2	275.9	246.4	1.82	1.84*	55.1	46.9
Kerala	180.8	159.4	365.0	286.5	2.02	1.80	60.7	49.3
Tamil Nadu	124.1	93.4	269.7	183.9	2.17	1.97	57.4	48.3
All India	141.6	121.9	310.3	243.3	2.19	2.00	50.4	47.6

Notes: Money earnings have been deflated by the Agricultural Consumer Price Index with 1964-65=100.

* Denotes an increase over 1964-65; the absence of * denotes a decrease.

Sources: (1) Government of India [1981: 140, 143, 206, 212], Tables 3.3(a), 1M, 3.3(a), 1W, 3.6(a), 1M, 3.6(a), 1W.

(2) Government of India [1979: 102, 103, 162], Tables 3.1(a), 1 and 3.4.

(3) Ahluwalia [1978] for the poverty indices.

whole, therefore, female agricultural labour in virtually all the states has suffered a decline in absolute real earnings—in some less than for male agricultural labour, and in several others more. The overall high gender differentials in employment and earnings, as well as the increase in differentials in some states, has additional negative implications in terms of female life survival chances—as discussed further on.

Underlying the regional variations in the changes in gender differentials in earnings would be a complex set of factors, including the differentials in demand for female and male labour created by HYVs (or undermined by mechanisation) in the predominantly wheat-growing states relative to the predominantly rice-growing ones, and the greater crowding of the labour market by women in the eastern states where (by the RLEs) the increase in the numbers of female agricultural labour has been higher than elsewhere.

In general, women are much more disadvantaged in their access to employment and earnings than men, for a number of reasons:

- (a) lesser job mobility due to their primary and often sole responsibility for childcare, the ideology of female seclusion, and the vulnerability to caste/class-related sexual abuse;
- (b) more limited access to information on job opportunities due to lower literacy

TABLE 7: WOMEN'S CUSTOMARY ACCESS TO LAND

Aspect	Region*	Northern		Central		Eastern		North-Eastern		Southern		Total Cases	
		No	Per Cent	No	Per Cent	No	Per Cent	No	Per Cent	No	Per Cent	No	Per Cent
Norms of land inheritance													
Communal ownership													
Patrilineal		53	(100)	16	(100)	14	(100)	14	(74)	34	(79)	131	(90)
Matrilineal		—	—	—	—	—	—	3 ^d	(16)	7 ^d	(16)	10	(7)
Bilateral		—	—	—	—	—	—	—	—	1	(2)	1	(1)
Access via specific customs under patriliney													
As daughters in son-less families													
		12+4 ^e	(30)	7	(44)	5+1 ^e	(43)	—	—	4-1 ^e	(12)	34	(23)
As widows		4	(8)	2	(12)	2	(14)	—	—	—	—	8	(6)
Usufructory rights only		3	(6)	2	(12)	2	(14)	2	(10)	3	(7)	12	(8)
As dowry		—	—	—	—	—	—	—	—	6	(14)	6	(4)
Mention of actual possession under patriliney													
As daughters in son-less families													
		1	(2)	2	(12)	—	—	—	—	2	(5)	5	(3)
As widows		4	(8)	2	(12)	—	—	—	—	2	(5)	8	(6)
Usufructory rights only		—	—	—	—	1	(7)	—	—	—	—	1	(1)
Total no of communities examined ^a		53	(100)	16	(100)	14	(100)	19	(100)	43	(100)	145	(100)

Notes: a Includes all communities of non-cultivating households, large and small owner-cultivators, and tenants.

b Garos: Historically matrilineal inheritance in other than land—land communally owned; now shifting to individual ownership and matrilineal or bilateral inheritance in land.

c Paite: Historically patrilineal inheritance in other than land—land communally owned; now shifting to individual ownership and matrilineal or bilateral inheritance in land.

d Historically matrilineal inheritance, shifting or shifted to bilateral inheritance.

e Cases where land can be inherited by the uxori-local son-in-law, or held on behalf of male children by the daughter or uxori-local son-in-law.

* The states included in each regional division are as follows: Northern: Jammu and Kashmir, Himachal Pradesh, Punjab, Haryana, UP and Rajasthan; Central: Gujarat, Maharashtra and Madhya Pradesh; Eastern: Bihar, Orissa and West Bengal, North eastern: Assam, Meghalaya and further north-east; Southern: Tamil Nadu, Karnataka, Andhra Pradesh and Kerala. For a complete listing of studies on which this table is based see Agarwal [1988b].

Source: Agarwal [1988b].

- levels, lesser access to mass media, and less interaction with the market place;
- (c) confinement to casual work in agriculture, only men being hired as permanent labourers—a feature that appears to be related, among other things, to the need for permanent workers to substitute for family men in ploughing, in market transactions (buying inputs, selling products), and in night operations (irrigation, guarding crops), that is, in work from which women tend to get socially excluded;
- (d) lower payments often even for the same tasks, made possible by the ideological assumptions (usually shared by both employers and workers) that women's earnings are supplementary to the family or that women are less productive than men, and by the lack of unionisation among female workers. The assumption that female labour is less productive has been little tested in the field, is difficult to test since men and women are concentrated in different agricultural tasks, and where tested has been proven fallacious—e.g., when new potato digging equipment was tested at the Punjab Agricultural University, female labour was found to be thrice as productive as male labour [Agarwal, 1983a];
- (e) the form in which payment is made—a Karnataka study of rural labour found that 70 per cent of male labour contracts and only 20 per cent female labour contracts involved meal provisions [Ryan and Wallace, 1985:24];
- (f) exclusion from productivity-increasing machinery, the induction of which typically displaces women, who are rarely trained in its use and who thus remain confined to manual tasks.
- Factors (a), (b) and (c) also lead to the overcrowding of women in certain occupations. Many of these factors emerge as significant

not only in relation to agricultural work but also non-agricultural work both in the informal sector—for instance, women petty traders usually confine themselves to markets near the home, although venturing further would fetch them better rates [Lessinger, 1988]—and in the formal sector of industrial employment [Banerjee, 1985].

Female-headed households (FHHs) are clearly the worst affected by the noted gender biases in employment and wages and, in general, are found to have much less access to and control over land, greater dependency on wage labour for employment, a higher incidence of involuntary unemployment, and a lower level of education and literacy than those headed by men.

Apart from unequal opportunities for employment and earnings, there are several additional gender-specific dimensions which affect women's work situation. The nature of their agricultural work exposes them to particular health hazards: rice transplanting, done primarily by women in the south, increases their susceptibility to ailments such as intestinal infections, arthritis, rheumatic joints, leech bites, etc [Mencher and Saradmoni, 1982]; and an association between working in rice fields and gynaecological infections has also been noted in rural Asia [UNDP, 1980]. The virtual absence of leisure in any real sense in women's lives because of their almost sole responsibility for childcare—even when not engaged in specific tasks they are constantly surrounded by young children demanding attention—has additional health implications. Again, the more task-specific, seasonal and casual nature of their work leaves women for longer periods without employment and income, and therefore, at greater risk of undernourishment. Added to this is the widespread sexual exploitation by landlords and employers such as the demand of sexual favours by the landlord/creditor to whom

the household is indebted [Gupta, 1985], or caste-related violence taking sexual forms, such as rape being used as a weapon by upper-caste landlords against low-caste tenants and landless labourers.

The significance of female labour participation also needs underlining due to its links with the noted intra-household discrimination against female children in access to food and health care and cross-regional variations therein, which impinge on female survival itself—an issue to which I shall now turn.

LINKAGES WITH FEMALE SURVIVAL CHANCES

Several studies find that the survival chances of female children are higher where

TABLE 9: LAND AREA WITH ENVIRONMENTAL PROBLEMS

Problem	Area (in mn ha)
Serious water and wind erosion	150.0
Waterlogging	6.0
Saline soils	4.5
Alkaline soils	2.5
Diara land	2.4
Other culturable waste land fit for reclamation	6.0
Total	172.0*
	(56.6 per cent of total land area)

Note: * The original table gave a figure of 175 mn ha, and included 3 mn ha of area under shifting cultivation as a 'problem'. This has been excluded since what is of interest here is the final effect on soils, whatever be the socio-economic cause.

Source: Government of India, Sixth Five-Year Plan, 1980-85 p 343.

TABLE 8: AVERAGE ANNUAL HOUSEHOLD INCOME FROM CPRs IN STUDY VILLAGES OF SELECTED DISTRICTS^a

Districts ^b	Per Household Annual Average Income (Rs)							
	Poor Households ^c				Other Households ^d			
	Number of Households	Value of CPR Products Collected	CPR-Share in Livestock Income	Total Value	Number of Households	Value of CPR-Products Collected	CPR-Share in Live-stock Income	Total
Mahbubnagar	15	382	152	534(17)	10	109	62	171(1)
Mehsana	26	421	309	730(16)	24	88	74	162(1)
Sabarkantha	35	432	336	818(21)	19	111	97	208(1)
Mysore	26	534	115	649(20)	11	112	58	170(3)
Mandsaur	23	400	285	685(18)	18	113	190	303(1)
Raisen	37	568	212	780(26)	15	283	185	468(4)
Akola	16	342	105	447(9)	9	85	49	134(1)
Aurangabad	22	405	179	584(13)	21	110	53	163(1)
Sholapur	17	443	198	641(20)	9	143	92	235(2)
Jalore	24	447	262	709(21)	27	170	217	387(2)
Nagaur	32	473	358	831(23)	25	143	295	438(3)
Dharmapuri	30	530	208	738(22)	11	112	54	164(2)

Notes: a Based on field work during 1982-85.

b Number of villages covered was one each in Mahbubnagar, Akola and Sholapur and two each in other districts.

c Includes landless households and those owning less than 2 ha dryland equivalent.

d Large farmer households.

Source: Jodha, N S [1986].

female labour participation (FLP)¹¹ is also higher—and relate this to (a) the anticipated contribution of the female child to household income as an adult [Rosenzweig and Schultz, 1982; Miller, 1981], and (b) to lower associated female marriage costs [Miller, 1981] both affecting her share in household resources. Rosenzweig and Schultz [1982], on the basis of an all-India household-level and a district-level analysis, find a negative correlation between female employment rates (given male employment rates) and gender differentials in child (those under 10) survival. Again from a cross-regional mapping of census and ethnographic evidence, Miller notes that regions of high FLP and low gender disparities in labour participation, are also those with: (a) low gender disparities in child survival;¹² and (b) low female marriage costs (due to low dowry incidence). Further, in regions where female marriage costs are low are also those where gender disparities in child survival are low. In other words, FLP as well as female marriage costs (and gender disparities therein) act both independently and interactively with the extent of neglect of female children in the family.

In general, the northern states are characterised by lower FLP rates (and higher gender disparities in participation), a higher incidence of dowry, greater intra-household discrimination against female children, and lower female (to male) survival chances than the southern states. It is still controversial, however, why FLP itself varies across regions, and explanations based primarily on ecological variations in cropping patterns and associated demand for female labour are found to be only partially valid.¹³ Clearly, among other things, varying cross-regional cultural norms relating to female seclusion and control over female sexuality, attitudes to manual work along caste lines, the relative incidence of low caste and tribal populations, cultivation techniques, all impinge on this as well.

Among the poor, since FLP is typically higher and dowry incidence lower than among the well-to-do households, we would expect anti-female bias to be lower. But if under-employment among poor women is

high, so that their *realised* contribution to the household income is low, or any increase in employment is not sustained long enough for it to have an impact on parental attitudes towards girl children, or the work is not socially or physically 'visible', or cultural factors in the region make for strong son preference and high dowry among all classes, then despite more women entering the labour force there could be a stronger bias against girls under poverty conditions, as indeed was noted in the previous section.

The question of the 'visibility' of women's work is especially important as it does not appear to be enough that women and girls do productive tasks, but also that the work they do is *socially recognised* as valuable. Agricultural fieldwork which is physically more visible than home-based work, and work which brings in earnings which is economically more visible than say the 'free' collection of fuelwood, fodder, or water, appears to be given (by no means justifiably) a higher social valuation. For instance, in the Sen and Sengupta [1984] study, where higher gender discrimination was found among the landless, the boys of poor households were more involved in 'earning' activities, girls in collecting (cowdung, paddy after harvest, etc), although the total time spent in both activities did not differ much between the sexes. Also, in the village where discrimination against girls was sharper, the differentials in girl/boy involvement in earnings was greater. Again, the association of shifts from bride-price to dowry with women's withdrawal from fieldwork, following economic improvement in small peasant households [as noted, for instance, in Karnataka by Epstein, 1973], would be attributable not to a decline in women's input in productive work *per se*, but to a decline in socially-valued 'visible' work in favour of work that is socially undervalued and rendered 'invisible'.

In other words, while we would expect a lesser tendency towards discrimination against females among the poor, this tendency would get modified and even reversed in a situation where there is high and sustained unemployment among women, where the productive work done is not visible, especial-

TABLE 11: SATELLITE DATA ON FORESTED AREA: STATEWISE AND ALL INDIA

States	(in mn ha)		
	Forest Area by Satellite Data		Area Controlled by Forest Department 1980
	1972-1975	1980-1982	
Andhra Pradesh	4.90	4.04	6.41
Assam	2.11	1.98	3.07
Bihar	2.27	2.01	2.92
Gujarat	0.95	0.51	1.95
Haryana	0.08	0.04	0.16
Himachal Pradesh	1.51	0.91	2.21
Jammu and Kashmir	2.23	1.44	2.19
Karnataka	2.95	2.57	3.79
Kerala	0.86	0.74	1.11
Madhya Pradesh	10.86	9.02	15.39
Maharashtra	4.07	3.04	6.41
Manipur	1.51	1.38	1.52
Meghalaya	1.44	1.25	0.86
Nagaland	0.82	0.81	0.29
Orissa	4.84	3.94	6.77
Punjab	0.11	0.05	0.24
Rajasthan	1.13	0.60	3.49
Sikkim	0.18	0.29	0.26
Tamil Nadu	1.67	1.32	2.18
Tripura	0.63	0.51	0.59
Uttar Pradesh	2.59	2.10	5.14
West Bengal	0.83	0.65	1.18
Arunachal Pradesh	5.14	5.21	5.15
Goa, Daman and Diu	0.12	0.11	0.11
Mizoram	1.39	1.20	0.71
All India			
Forest cover	55.52 (16.89)	46.35 (14.10)	
Closed forests	46.12	36.02	
Open forests	8.77	10.06	
Mangrove forests	0.33	0.26	

Note: Figures in brackets give per cent of total land area.

Source: National Remote Sensing Agency, Government of India.

TABLE 10: WATERLOGGING AND SOIL SALINITY IN SELECTED IRRIGATED PROJECTS

Irrigation Projects	State	(Thousand ha)			
		Extent of		Annual Increase	
		Waterlogging	Soil Salinity	Waterlogging	Soil Salinity
Sriramsagar	Andhra Pradesh	60.00 (47.62)	1.00(0.79)	10.00	0.17
Tungabhadra	Andhra Pradesh and Karnataka	4.65 (1.27)	24.48 (6.69)	0.17	1.91
Ukai-Kakrapar	Gujarat	16.25 (4.32)	8.29 (2.20)	0.63	0.32
Mahi-Kadana	Gujarat and Rajasthan	82.00* (16.81)	35.76 (7.33)	3.90*	1.70
Malaprabha	Karnataka	1.05* (0.99)	—	0.52*	—
Chambal	Madhya Pradesh and Rajasthan	98.70 (20.31)	40.00 (8.23)	7.59	3.08
Tawa	Madhya Pradesh	—	6.64 (3.79)	—	1.11
Rajasthan Canal	Rajasthan	43.10 (7.98)	29.11 (5.39)	3.92	2.65
Sarda Sahayak	Uttar Pradesh	303.00* (28.34)	50.00 (4.68)	5.72*	0.94

Note: * Figures include waterlogging and soil salinity.

Figures in brackets give the percentage of the irrigation potential created in the respective command areas.

Source: Joshi and Agnihotri [1984].

ly economically, or where gender differentials in earnings are high. This tendency would also vary in degree inter-regionally since region-specific cultural norms (which indirectly impinge on the economic) and prevailing ideology, would strengthen son preference and female neglect among all classes within that region, irrespective of their FLP. In particular, in the northwest, marriages among strangers at considerable distances from the girl's natal home reduce the possibility of parents getting any help from married daughters. This is reinforced by social taboos against their accepting any such help; and the emphasis on hypergamous marriages is again associated with high dowries. In the south, as noted, preferred close-kin marriages, marriages within or close to the girl's natal village, and prevailing social norms have traditionally promoted greater interaction, and on a more equal basis, between the groom's and bride's families, and also tended to reduce the importance of dowry in marriage alliances.

However, while the emphasis on cross-regional, cross-class variations in the factors affecting female well-being and survival is clearly important, in recent years these differences appear to be narrowing. In particular, both the incidence and amounts of dowry have shown significant escalation across all regions and class/caste groups, including poor low-caste households which earlier practised brideprice. This appears to be a result partly of the unequal gender effects of changing employment and earning opportunities in the rural areas with technological change, and partly of factors such as the homogenisation of cultural values and practices brought about by modern media, rising consumerism, etc. In many villages of Punjab and Himachal Pradesh, the shift from brideprice to dowry is near total and dowry amounts have increased manifold [Sharma, 1980; Horowitz and Kishwar, 1982]. Similar trends are noted in the southern states of Karnataka [Epstein, 1973], Kerala [Gulati, 1984], and Tamil Nadu [Venkataramani, 1986]. This is likely to strengthen anti-female bias within the family across the country, but particularly in the northwest where gender differentials in earnings among the poor are not only the highest, but also increasing.

III

Women's Disinheritance from the Means of Production—Land and Land-Related Technology

Apart from inequalities in access to income-earning opportunities, there are also significant gender differences in access to agricultural land—the basic means of production in agrarian economies.

An estimated 89 per cent of rural households in India own some land, and an estimated 74 per cent operate some [NSSO, 1987]. Although, given the high degree of land concentration, the majority of house-

holds have only marginal plots of one hectare or less (owned or operated)¹⁴ this can yet significantly reduce the household's risk of absolute poverty,¹⁵ partly due to direct production possibilities (for crops, fodder, or trees—unless of course the land is totally barren), and partly to indirect advantages such as serving as collateral for credit from institutional and private sources, reducing the risk of unemployment,¹⁶ helping agricultural labour maintain its reserve price and even push up its real wage rate,¹⁷ serving as a critical reserve in years of bad harvests and, where the land is owned, serving as a mortgagable or saleable asset during a crisis.¹⁸

WOMEN'S CUSTOMARY ACCESS TO LAND

Customarily, access to land has been largely confined to male household members. Table 7, based on ethnographic information culled from village studies, gives an idea of women's customary land access cross-regionally among 145 communities where the households had some access (as owners or tenants). The overwhelming normative pattern (in 131 of these communities) is clearly patrilineal. It is only in small pockets of the northeast (principally the states of Meghalaya and Assam) and the southwest (mainly Kerala) that matrilineal and bilateral inheritance patterns prevail among certain communities. Under tradi-

tional Hindu law according to both the main legal systems—*Mitakshara* and *Dayabhaga*—women did not inherit immovable property such as land (although they could be gifted it), and at best enjoyed a life interest in ancestral property under special circumstances—as widows or daughters in son-less families. Islamic law did recognise women's rights to inherit ancestral property, including immovables, but not equal to men's; and in relation to agricultural land, in most states, the religious law was superseded by regionally-prevailing customary law under which women were typically excluded.¹⁹ Usufructory rights were somewhat more common, but mainly confined to tribal communities, especially in eastern and northeastern India.

What is noteworthy is that first, even in communities which traditionally recognised women's inheritance rights in land, the recognition was not unconditional but was usually linked to the woman remaining in the parental home or village and the husband joining (or visiting) her there.²⁰ This served as a means of ensuring that the land remained within the control of the extended family. Second, over time, even these limited rights, whether usufructory, as in most tribal (matrilineal or other) communities, or of inheritance, as among non-tribal matrilineal communities such as the Nairs of Kerala, have been systematically

TABLE 12: EXTENT AND DECLINE OF CPR LAND IN STUDY VILLAGES OF SELECTED DISTRICTS

State and District	Number of Villages	Area of CPR Land (ha)	CPRs as Per Cent of Total Village Area		Per Cent Decline in CPR Area since 1950-52
			1982-84	1950-52	
Andhra Pradesh					
Anantapur	2	221	15	24	36
Mahabubnagar	5	408	9	16	43
Medak	3	198	11	20	45
Gujarat					
Banaskantha	5	167	9	19	49
Mehsana	5	224	11	17	37
Sabarkantha	5	198	12	22	46
Karnataka					
Bidar	3	297	12	20	41
Dharwad	3	242	10	18	44
Gulbarga	3	291	9	15	43
Mysore	3	335	18	27	32
Madhya Pradesh					
Mandsaur	4	327	22	34	34
Raisen	6	770	23	42	47
Vidisha	4	338	28	38	32
Maharashtra					
Akola	5	192	11	19	42
Aurangabad	4	304	15	21	30
Sholapur	4	422	19	25	26
Rajasthan					
Jalore	5	639	18	29	37
Jodhpur	3	591	16	38	58
Nagaur	3	619	15	41	63
Tamil Nadu					
Coimbatore	4	187	9	17	47
Dharmapuri	3	225	12	26	52

Note: Based on village-level records and field work during 1982-85.

Sources: Jodha [1986].

eroded. The decline in matriliney, especially since the turn of the century, is a result of a complex mix of factors. In particular, state policy in both the colonial and post-colonial periods has played a primary role in triggering or strengthening other changes. This is especially so in the tribal northeast, where among communities such as the matrilineal Garos, as long as land was communally owned and shifting cultivation practised, women had direct use rights to land and were the primary cultivators. But shifts to settled agriculture, technological modernisation, and land privatisation have been associated with the marginalisation of female labour, the registration of the private plots in male names, and a systematic deprivation of Garo women of their traditional land rights.²¹

Indeed it is necessary to seriously re-examine land ownership and use policies in the tribal northeast where analysis suggests that the traditionally egalitarian class and gender relations could have been better preserved if technological change had been more uniformly spread across households, and the control and cultivation of land encouraged more along communal and gender-egalitarian lines [Agarwal, 1987a].

BARRIERS TO WOMEN CLAIMING THEIR LEGAL SHARES TODAY

Modern legislation, especially since independence, has given women of most communities in India the rights to individually own, use and dispose of land and other immovable property, although the nature of these rights varies according to the personal laws governing different religious communities and even regions. But a common feature of all the laws is that these rights are still not on an equal basis with men's. Even more critical are the factors which restrict women's ability to exercise their limited legal claims, and to control and independently farm the land where they do get access.

First, where patrilocality, village exogamy and long distance marriages are the norm, as they are in much of northern India, these, on the one hand, serve as barriers to women's ability to exercise direct control over the land they may inherit or be gifted in their natal villages; and, on the other hand, make the brother a vital link with the natal home. Especially after her father's death, a woman's access to her natal home can depend crucially on her relationship with her brother, who is thus seen as providing a social, economic and even physical security, in case of marital discord, ill-treatment and marriage breakup, apart from playing a ritual role in her children's weddings among Hindu families of all castes. Most women thus give up their claims in favour of their brothers to maintain the latter's goodwill, although, in actual practice, the material support provided by brothers may not be significant.

Second, where women as sisters and daughters in traditionally patrilineal groups

do not voluntarily give up their rights in favour of their brothers and instead file claims, male kin have been noted to resort to various methods of circumventing modern laws. Fathers leave wills disinheriting daughters, or wills have been forged by relatives after the person's death [Parry, 1979]; or the brothers have appealed to revenue authorities (who maintain land registers) that their sister is wealthy and does not need the land, or that she is an absentee landlord as she is living with her husband in another village [Mayer, 1960]. This last can become a significant way of preventing women from claiming land where village exogamy is usually mandatory. Land disputes are found to be increasing, and usually centre around male attempts to prevent sisters or daughters from inheriting [Mayer, 1960].

Single women (unmarried or widowed) are particularly vulnerable to various forms of harassment by male kin, including involving them in expensive litigation which may force them to mortgage their land for paying legal expenses and thus lose it, or threatening to kill them if they insist on exercising their claims. Cases of direct violence to prevent women from filing their claims or exercising their customary rights have been noted, especially in Bihar, beatings being common, and murder, often following accusations of witchcraft, not unknown [Minturn and Hitchcock, 1966; Kishwar, 1987]. Falling land/person ratios are likely to further intensify competition for limited resources and hence the potential for such violence.

Third, official policies and programmes reflect and reinforce traditional attitudes. Prevailing biases tend to affect both court judgments and the formulation and implementation of government policies, including the land reform programme. Consider two illustrative examples. In Bodhgaya (Bihar) landless women, after an extended struggle for land controlled illegally by a *Math* (a local religious body), were granted rights by the government in two villages. But when they sought to formally register the land in their names, the district officer initially refused, on the grounds that titles could only be given to men since they were the heads of households [Manimala, 1983]. Again when landless women in Udaipur district (Rajasthan) claimed a part of the village wasteland to grow herbs, fodder, etc, the bias of the local official was clear: "But we do not allot to women". When asked why not, he said with unbeatable logic: "Because we never have, so that is why we won't!" [Lal, 1986].

This systematic bias in the implementation of state policy is found even in the context of matrilineal tribal communities. Among the Garos of the northeast, for instance, women have traditionally inherited property, but under the land privatisation encouraged by the state, the title deeds granted to individual households are typically in male names [Mazumdar, 1978].

BARRIERS TO WOMEN SELF-MANAGING AND CULTIVATING LAND

Quite apart from the obstacles to women claiming their inheritance in land, it is typically not easy for those who do inherit to maintain control over it, or to self-cultivate it. Several factors (outlined below) circumscribe women's ability to function as independent farmers, and also to lease in land where they own little or none. While most of these obstacles affect women as a gender, their importance and implications are especially adverse for women in poverty.

Where women inherit as daughters, in areas where village exogamy and long distance marriages are the norm, these pose obvious practical difficulties in managing the land. This is compounded by the ideology of seclusion which prescribes that women confine their movements and visibility within circumscribed spaces and restrict their interaction with male strangers.²² This places women (even where the land is in their village of residence) at a considerable disadvantage in seeking information on agricultural practices, purchasing inputs, hiring labour and machinery to plough the fields, selling the produce, etc. Contacts developed by men socially and in the market place considerably ease their ability to obtain labour and inputs in time, or solicit help from fellow farmers. Women also have less command over the labour of relatives than men—both because they cannot provide reciprocal labour or favours in the same way, and restrictive social norms. Women's limited mobility in general can directly or indirectly restrict their access to credit and agricultural inputs as well. For instance, credit and input co-operatives situated in the urban centres are rendered relatively inaccessible to the many rural women who are unfamiliar with bus routes and forms of urban interaction, and are illiterate in addition. Several poor widows to whom I spoke in Rajasthan while doing fieldwork there, described a visit on their own to the nearest town as a traumatic experience. At the same time, many of them found it difficult to get loans within the village as well: "The moneylender often refuses to lend to us but men can get credit more easily since they can find some wage work, if necessary by migrating, to repay the debt."

In general, the ideology of seclusion restricts women's physical mobility and participation in activities outside the home—be it work in the fields, interactions in the market place, or wider contact with the world—and consequently their ability to manage farming independently.

These factors would operate with less severity or negative consequences among communities and in regions where village endogamy is the rule and female seclusion practices less rigid (or non-existent), as in the northeastern and southern states of India where female labour participation in agricultural fieldwork (although varying by

class) is also, in general, much greater than in the north.

Successful self-management of land by women is constrained too by restrictions to their access to agricultural technology imposed by their limited control over cash for purchasing modern inputs, gender (along with class) biases in extension services, lower literacy levels than men, and ritual taboos against women ploughing. Indeed, a taboo against ploughing appears to be widespread across many cultures in Asia, and certainly holds across all communities in India. The Oraon tribals of Bihar believe that if a woman were to plough there would be no rain, and calamity would follow [Dasgupta and Maiti, 1986]. Himachali men told Sharma [1980] that *God* had decreed women should not plough. When women in desperate circumstances have ploughed family land they have usually been severely punished by the villagers [Dasgupta and Maiti, 1986; Kishwar, 1987].

In effective terms this taboo makes dependency on men in settled cultivation unavoidable, and greatly circumscribes women's ability (especially if poor) to farm independently. Poor female-headed households are placed in a particular quandary. As Sharma [1980:114] notes from her study in Punjabi: "It is at ploughing time that Durgi complained most bitterly of her widowhood. No one was prepared to plough her fields for her without being paid; and

even those who would do it for pay would only do it after they had completed their own ploughing." In Kithoor village (Rajasthan) several widows told me that tractor owners demand advance or immediate cash payment for ploughing their fields: "A man doesn't face this problem because it is assumed that he will be able to find work and repay". Delayed ploughing also adversely affects crop yields which are linked to timely field preparation. What is apparent too from our discussion so far is that in poor rural women's struggles for subsistence (in which control over land is a crucial element), the material and ideological are closely interwoven, so that joint struggles on both the economic and cultural fronts become necessary (of which more later).

IV Decreasing Subsistence Possibilities from Communal Resources

Given their limited access to private property resources, the rights to communal resources (especially for the gathering of essential items for daily use) have always provided rural women and children in general, but those of tribal, landless or marginal peasant households in particular, a source of subsistence, unmediated by dependency relationships on young adult males.

Village commons and the country's forests have traditionally provided and continue to provide (although decreasing so) a wide variety of essential items—food, fuel, fodder, fibre, small timber, manure, bamboo, medicinal herbs, oils, materials for house-building and handicrafts, resin, gum, honey, spices, etc— for personal use and sale. A study on the food habits of tribals in Madhya Pradesh lists 165 trees, shrubs and climbers that they use as food in various forms: 19 provide roots and tubers, 35 petals and leaves cooked as vegetables, 63 provide fruits, 17 yield juice that is taken fresh or fermented, in addition to nuts, figs, honey, etc [Tiwari, 1977, quoted in Randhawa, 1980: 98-99]. Similarly, tribals in Attapadi Valley in Kerala use some 80 different fruits, leaves, barks and flowers for medicine [KFRI, 1980: 235]. Many of these products have also been critical for tiding poor rural families over periods of seasonal or acute food shortages [Agarwal, 1988a].

Jodha's [1986] analysis of data from 12 semi-arid districts in 7 states of India indicates that while all rural households use common property resources (CPRs) in some degree, for the poor (identified by Jodha as landless labour and those with less than 2 ha of dry-land equivalent), CPRs account for as much as 20 per cent or more of total income in 7 of the 12 districts, and 9-18 per cent in the remaining, but contribute only 1-4 per cent of the incomes of the non-poor

TABLE 13: DISTRIBUTION OF PRIVATISED CPRs IN STUDY VILLAGES OF SELECTED DISTRICTS^a

State, District and Number of Villages	Total Land Given (ha)	Total Households (No)	Per Cent of Land to		Per Cent of Recipients Among		Per Household Land Are: Received		Per Household Land Area Owned				
			Poor	Others	Poor	Others	Poor	Others	Poor		Others		
									Before ²	After ^b	Before	After	
Andhra Pradesh													
Mahbubnagar	(3)	418	343	50	50	76	24	0.8	2.6	0.3	0.9	3.0	5.1
Medak	(3)	75	58	51	49	59	41	1.1	1.5	1.0	2.2	3.1	4.6
Gujarat													
Banaskantha	(3)	75	29	18	82	38	62	1.3	3.4	0.8	2.0	5.4	8.8
Mehasana	(2)	85	63	20	80	36	64	0.7	1.7	1.0	1.7	8.0	9.8
Sabarkantha	(3)	127	74	28	77	55	45	0.9	2.8	0.5	1.1	7.0	9.8
Karnataka													
Bidar	(3)	89	55	39	61	64	36	1.0	2.8	1.0	2.0	6.4	9.2
Gulbarga	(3)	112	50	43	57	60	40	1.6	3.2	0.8	2.4	4.5	7.7
Mysore	(3)	161	98	44	56	67	33	1.2	2.9	0.9	1.9	4.1	11.6
Madhya Pradesh													
Mandsaur	(2)	120	55	45	55	75	25	1.3	4.7	1.2	2.5	7.7	12.4
Raisen	(4)	115	72	42	58	68	32	1.0	2.9	1.3	2.2	6.2	9.0
Vidisha	(4)	123	77	38	62	48	52	1.3	1.9	1.3	2.5	4.9	6.8
Maharashtra													
Akola	(3)	101	100	39	61	58	42	0.7	1.5	1.0	1.6	3.1	4.6
Aurangabad	(2)	83	55	30	70	42	58	1.1	1.8	1.1	2.2	6.4	8.3
Sholapur	(3)	132	72	42	58	53	47	1.5	2.3	0.7	2.2	3.4	5.6
Rajasthan													
Jalore	(2)	83	27	14	86	37	63	1.4	4.9	0.3	1.7	7.2	12.5
Jodhpur	(2)	405	318	24	76	35	65	0.9	1.5	0.4	1.3	2.3	3.8
Nagaur	(3)	147	81	21	79	41	59	1.2	3.1	1.3	2.5	2.4	5.2
Tamil Nadu													
Coimbatore	(4)	206	145	50	50	75	25	1.1	2.9	0.8	2.5	3.8	5.8
Dharmapuri	(3)	241	127	49	51	55	45	0.9	2.1	1.0	1.9	4.6	7.5

Note: a Based on field work during 1982-85.
b Before and after receiving CPR land.

Source: Jodha [1986].

(Table 8). The dependence of the poor is especially high for fuel and fodder: across the regions studied, CPRs supply 91-100 per cent of firewood and 66-84 per cent of the total domestic fuel as well as 69-89 per cent of the grazing needs of the landless and landpoor, but only 8-32 per cent of the domestic fuel and 11-42 per cent of the grazing needs of non-poor households. Ryan et al's [1983] detailed dietary survey in some of the same villages further shows that CPRs account for 8-9 per cent of the food intake of poor households and 4 per cent of the better-off. The noted inter-regional variations in dependence on CPRs stem from variations both in the availability of CPR area and its productivity (in overall terms and in terms of specific products). Access to CPRs is also found to reduce income inequalities in the village between poor and non-poor households—the gini coefficients of village income distribution being consistently lower in all the states studied when CPR incomes are added in.

Apart from the village commons, forests have always been a significant source of livelihood—providing the basis of swidden cultivation, hunting, and the gathering of minor forest produce (MFP). Even today nearly 5 million persons (half of them in the northeast and the rest in central and eastern India) are assessed to be involved in shifting cultivation, covering an area of about 0.7 mn ha [Srivastava, 1977]. In addition, MFP accounts for fairly significant proportions of total tribal incomes.²³ On the whole an estimated 30 million or more people in the country depend wholly or substantially on MFP for a livelihood [Kulkarni, 1983].

However, the availability of this means of sustenance is being seriously eroded by two parallel trends:

- a) a growing deterioration in the productivity of available communal resources;
- b) a growing privatisation of these resources and their concentration in the hands of a few.

In macro-terms the overall environmental decline in the country's natural resource base is manifest in deteriorating soil conditions and depleting water and forest resources. In 1980, by official estimates, 172 mn ha (or 56.6 per cent of the country's land) was suffering from environmental problems, especially water and wind erosion (Table 9). Unofficial estimates are even higher. The estimated net annual loss with waterlogging alone is as high as half the irrigated potential created by some canal projects such as the Sriramsagar in Andhra Pradesh (Table 10). The area under periodic floods has increased from 20 to 40 mn ha between 1971-1981—a doubling in ten years. At the same time, due especially to the over-expansion of tubewell irrigation, groundwater levels have fallen permanently (as opposed to a seasonal decline) in several states, both in the Deccan and the Indo-Gangetic plains.²⁴

Forest cover again has been declining rapidly. Satellite data by the National

Remote Sensing Agency reveals that in 1972-75, 55.5 mn ha or 16.9 per cent of geo-area was forested (belying the hitherto official claim of 23 per cent) which by 1980-81 has fallen to 46.4 mn ha or 14.1 per cent—an annual fall of 1.3 mn ha. Almost the entire decline has been in terms of closed forests, and as much as a fifth of what remains is open or degraded forest (Table 11). The effect of deforestation and disruption of the fragile ecological balance especially in the Himalayan region (the largest and most crucial watershed in the country) is already apparent in soil erosion, climatic mal-effects, the drying up of perennial streams, the rapid siltation of rivers and reservoirs, the increasing frequency of landslides in the hills and of flooding in the plains, desertification, and so on. In Western Rajasthan the drought frequency is predicted to be every 2-5 years, and, in the rest of the country, every 3-5 years. In many regions, drought-like conditions are being experienced even in years of normal rainfall, and getting intensified when rains fail. Micro-evidence further reveals the increasing degradation of the village commons. Jodha's [1985] survey of CPR productivity since the mid-1940s shows a fall in terms of all the products.

With environmental deterioration, even the limited good quality land in the hands of the poor is turning unproductive. In Kolar district (Karnataka) while large farmers are found to be growing grapes and mulberry with the help of licensed deep tubewells, the resultant sharp drop in water tables has rendered large tracts barren, including the land given to the landless under the land reform programme [Bandhyopadhyay, 1986]. In addition, the new agricultural technology has had noteworthy negative effects on communal resources. Apart from the mentioned adverse impact of large irrigation works and rapid tubewell expansion, fertiliser and pesticide runoffs into water sources have destroyed fish life and polluted water for human use in several areas [CSE, 1984-85].

Alongside this process of deterioration of communal resources has gone the privatisation of CPRs. Over the past 3 decades alone, as Jodha's survey of 21 districts in 7 states reveals, the village area under CPRs has declined from 15-42 per cent (varying in region) in 1950-52 to 9-28 per cent in 1982-84; in other words, a decline ranging from 26 per cent to as much as 58 per cent in some regions. In states such as Gujarat and Tamil Nadu there are virtually no commons left in many villages (Table 12). Jodha attributes this to three causes: illegal encroachments by farmers, made legal over time; governmental distribution of CPRs to individuals under various schemes purportedly to benefit the poor, such as the land reform programme as implemented in the 1950s and the 20-point programme of the 1970s; and the auctioning of parts of CPRs by the government to private contractors for commercial exploitation. Much of this privatisation has, however, favoured the

larger farmers. For 16 of the 19 districts covered, the share of the poor was less than that of the non-poor. Those who already owned relatively more land also received more: the poor got between 0.8 to 1.6 ha per household, the others 1.5 to 4.9 ha per household (Table 13).²⁵ Hence the collective loss of the poor was not made up by the private gain of a few among them. Since poverty estimates would significantly underestimate the income contribution from these sources, they would fail to capture too the effect of a decline in their availability on poverty trends.

Within poor households, women and female children bear the main burden of this deterioration and decreasing access. As the main gatherers of fuel, fodder and water, their working day has lengthened (Table 14): In Bihar where 7-8 years ago enough firewood could be gathered for self-consumption and sale within 1-2 km, now a trek of 8-10 km per day is required. In some villages of Gujarat, with the complete denudation of the surrounding forest land, even a daily search of 4-5 hours yields little apart from shrubs, weeds and the roots of trees—these do not provide continuous heat and increase cooking time [Nagbrahman and Sambrani, 1983]. Shortages also induce shifts to less nutritious foods which need less fuel to cook or can be eaten raw, or force people to eat partially cooked food (which could be toxic), or left-overs (which tend to rot in tropical climates), or miss some meals altogether—as already evident in parts of South Asia [Hughart, 1979; Howes and Jabbar, 1986]. A trade-off between the time spent in fuel gathering vs cooking again can adversely affect the meal's nutritional quality [Skar, 1982]. Indeed the fact that malnutrition can be caused as much by fuel shortages as food shortages, has long been part of the conventional wisdom of rural women who observe: "It's not what's in the pot that worries you but what's under it". While these adverse nutritional effects impinge on the whole household, women bear an additional burden because of the gender biases in intra-family food distribution noted earlier, and the little likelihood of their being able to afford extra calories for the additional energy expended in fuel collection.²⁶

Similar implications for women's time and energy arise with the decline in common grazing land and the acute fodder shortage in the country noted as early as a decade ago, when availability fell short of requirements by as much as 44 per cent in concentrates and 38.4 per cent in green fodder [National Commission on Agriculture, 1976]. Many landless widows I spoke to in Rajasthan said they could not venture to apply for an IRDP²⁷ buffalo loan as they had nowhere to graze it nor cash to buy fodder. As other sources of livelihood get eroded, selling firewood is becoming increasingly common especially in eastern and central India, even as availability decreases. Most 'headloaders' are women who earn a

meagre Rs 5.50 or so a day for 20 kg of wood [Bhaduri and Surin, 1980; Agarwal and Desingkar, 1983].

Additionally, the decline in water tables with deforestation and tubewell installation has compounded the problem of drinking water. Today 39 per cent of the villages and 49 per cent of the population is still without safe drinking water within 1.6 km; and in many areas the number of 'problem' village is increasing: in Maharashtra a 51 per cent increase in the number of wells and mechanised pumpsets between 1960 and 1980 is estimated to have increased the problem villages from 1700 in 1980 to 2300 in 1983 [Jayal in CSE, 1985-86:30]. Where *dalit* women have access to only one well, its drying up means an endless wait for their vessels to be filled by upper-caste women.²⁸ A similar problem arises when drinking water wells go saline near irrigation works. The burden of family ill-health associated with an increase in water-borne diseases with canal irrigation, or with the pollution of rivers and ponds with fertiliser and pesticide run-offs, again falls specifically on women who are also themselves most exposed to such diseases. The agricultural tasks they perform leaves them similarly vulnerable—in China DDT and BHC residues have been found in mothers' milk, women agricultural labourers being particularly susceptible.²⁹ Soil erosion likewise has compounded problems of crop production for women specially in areas of high male outmigration.

Again, the massive displacement of people due to large irrigation works has specific class and gender implications. Rehabilitation usually takes care (even if in a limited way) of the interests of the larger landowning groups, in terms of an allotment of alternative plots, but not those of the landless. This has particularly adverse implications for women who cannot re-create easily, if at all, the nexus of kin support they have built up in the villages around, and

which they can draw upon during a crisis; nor can they easily access alternative community sources of fuel, fodder etc. These problems have been noted widely in the context of large irrigation re-settlement schemes in several parts of Asia and Africa.³⁰

THE CAUSAL PROCESS

Underlying the environmental crisis and also its particular manifestations for the poor, and especially women, are the specific ways in which natural resources—forests, water, soils—have been appropriated in the name of development, and for the benefit of a few. There is a growing documentation on the specifics of this process as it has affected particular communities and regions, and a detailed discussion will not be attempted here. However, a few points need emphasising.

Traditional practices relating to natural resource use—the gathering of firewood and fodder or shifting agriculture—were typically not destructive of nature. For instance, firewood for domestic use in rural households was and still is usually collected in the form of twigs and fallen branches which does not destroy trees—75 per cent of firewood used as domestic fuel in north India (and in some areas even 100 per cent) is in this form. Again the traditional practice of obtaining tree fodder by careful lopping often enhances overall fodder productivity [Bandhyopadhyay and Moench, 1985]. Likewise, *jhum* (swidden) cultivation, as earlier practised, allowed sufficient time for soil regeneration—at the turn of the century, in northeast India, the fallow period was of at least 7-10 years [Playfair, 1907]. To the extent that today shortening *jhum* cycles are leading to soil erosion, or trees elsewhere being felled by the poor, it may be seen as a *symptom* of the crisis—a growing population being forced to subsist on a *declining* and *deteriorating* land base. Restrictions and

regulations on local people's access to MFP has grown. For several products only the state has rights of collection and trade. The local population can collect forest produce only for personal use but not sale, and only from selected forest areas, being almost completely barred from the large tracts declared 'reserved'. In many areas, even this limited access is in the nature of 'concessions' rather than of 'rights', and tribal harassment and exploitation by forest guards is widespread [Chand and Bezboruah, 1980; Swaminathan, 1982; Joshi, 1981].

Indeed for tribals the destruction of the forest and growing restrictions on what remains, has eroded a whole way of life. As two close observers of life among the Orissa tribals note: "The earlier sense of sharing has disappeared. Earlier women could rely on their neighbours in times of need. Today this has been replaced with a sense of alienation and helplessness—the tendency is to leave each family to its own need." Widows and the aged are the most neglected [Fernandes and Menon, 1987: 115]. Communal systems of labour organisation and co-operation have also almost vanished in most tribal communities, being replaced with hired wage labour.

In contrast to the traditional forms of forest use by tribals, the primary thrust of state policy in both the colonial and post-colonial periods has been commercial gain. Historically, under British rule, there was virtually indiscriminate forest exploitation in India, through European and Indian private contractors, especially for the expansion of railways in the mid-19th century and for building ships, bridges, etc, during the inter-war years. Large tracts were also given to favoured individuals for the setting up of tea and coffee plantations, and land clearing for crop cultivation encouraged to augment land revenues.³¹

Post-colonial policies show little shift away from the colonial view of forests

TABLE 14: TIME TAKEN AND DISTANCE TRAVELLED FOR FIREWOOD COLLECTION BY REGIONS

Region	Year of data	Firewood Collection*		Data Source
		Time Taken	Distance Travelled	
Chamoli (hills)				
(a) Dwing	1982	5 hr/day**	over 5 km	Swaminathan (1984)
(b) Pakhi		4 hr/day	over 3 km	
Gujarat (Plains)				
(a) Forested	1980	Once every 4 days	n a	Nagabrahman and Sambrani (1983)
(b) Depleted		Once every 2 days	4-5 km	
(c) Severely depleted		4-5 hr/day	n a	
Madhya Pradesh (plains)	1980	1-2 times/week	5 km	Chand and Bezboruah (1980)
Kumaon (hills)	1982	3 days/week	5-7 km	Folger and Dewan (1983)
Karnataka (plains)	n a	1 hr/day	5.4 km/trip	Batliwala (1983)
Garhwal (hills)	n a	5 hr/day	10 km	Agarwal (1983b)
Bihar (plains)	c 1972	n a	1-2 km/day	Bahaduri and Sarin (1980)
	1980	n a	8-10 km/day	
Rajasthan (plains)	1986 (winter)	5 hr/day	4 km	Personal observation

Notes: * Collected primarily or solely by women and children.

** Average computed from information given in the study.

n a Information not available.

primarily as a source of commercial use and financial gain. The National Commission of Agriculture's report on forestry clearly saw forests as suppliers of raw materials to industry (especially, pulp and paper), defence, communications and export, with the needs of the people for fuelwood, fodder, etc, being seen as secondary [GOI, 1976]. The clearing of forests has continued for agricultural expansion, large river-valley projects, mining, and stone quarrying; and for providing building logs, industrial raw materials, and fuel to small-scale and cottage industries.

Recent thrusts towards tree-planting schemes by the government echo the same concerns. As described in detail in Agarwal [1986], these schemes—many of them promoted under the banner of social forestry—are concerned essentially with wood for commercial use and not as domestic fuel, with monocultural plantations and not with forests, and have typically exacerbated the shortages of fuelwood, fodder and water. With the exception of farm forestry (tree planting on private land by farmers), most other ventures (such as direct planting by the government and community forestry on village land) have failed, for varied reasons. For instance, the government's direct planting efforts have typically favoured teak, pine and eucalyptus plantations even at the cost of felling mixed forests,³² frequently involved the taking over of land used for other purposes by the local population,³³ have been top-down in their implementation, and, in many cases far from benefiting the poor have taken away even existing rights, leading to widespread local resistance. Community forestry schemes, on the other hand, are typically obstructed by economic inequalities in the village community, and the associated mistrust of the poor in a system that cannot ensure equitable distribution of woodlot output.

The real success stories, with plantings far exceeding targets, relate to farm forestry. The trees planted are those most in demand for pulp and poles (eucalyptus is a great favourite) and the gains are limited to a small percentage of farm families (e.g. 6 per cent in Gujarat), operating medium and large holdings [World Bank, 1985]. To reap quick profits, in several areas farmers have allotted fertile crop land to trees. As a result, employment, crop output, and crop residues for fuel have declined, often dramatically as in parts of Karnataka;³⁴ and soil fertility is also likely to fall in the long run.

Essentially, as some environmentalists have rightly been emphasising such an approach to forestry, promoted as 'scientific forestry', is *reductionist* (nature seen as individual parts without the inter-connections: the forest reduced to trees, the trees to wood for commercial use), which ignores the fact that vegetation, soil and water form part of a complex and *interrelated* resource system within the forest. In the reductionist world view "only those properties of a resource system are taken into account which generate profits through exploitation and extraction;

properties which stabilise ecological processes but are commercially non-exploitative are ignored and eventually destroyed" [Shiva, 1987].

Indeed, the noted effects of development policies on environment—be they policies relating to agriculture or more directly to forests and water use, point to a strategy which has been extractive/destructive of nature rather than conserving/regenerative, which does not explicitly take account of the long-term complementarity between agriculture and natural resource preservation, and which therefore raises serious questions about our ability both to sustain long-term increases in agricultural productivity and to provide sustenance for the people. As one environmentalist observed; "Sustenance, in the final analysis is built on the continued capacity of nature to renew its forests, its fields and its rivers. Sustenance of people depends on the life of vegetation, water and soils" [Shiva, 1988].

Today deteriorating soil conditions under large-scale irrigation works are associated with declining crop yields and, in the case of some irrigation projects such as the Chambal and Tawa, yields have, in fact, fallen below those in the period immediately prior to the projects [Joshi and Agnihotri, 1984; Kalpavriksh, 1985]. The spread of new crop varieties to areas with uncertain weather conditions and without an adequately assured and controlled water supply, has also made crop production more susceptible to and more variable with rainfall fluctuations, than it was with the traditional technology [Ray, 1983; Rao, et al, 1987]. Again, intensive cropping and the use of chemical fertilisers is linked with the depletion of crucial soil micro-nutrients—zinc, copper, manganese. Attempts to restore any one of these by adding it in a chemically pure form can lead to deficiencies in others, as noted in Ludhiana district in Punjab [CSE, 1985-86], in turn depressing crop yields. Similarly, monocultural HYV varieties are highly vulnerable to pest attack, but the use of pesticides that destroy one pest, increase the risk of secondary outbreaks as pests develop resistance to chemicals, and non-target organisms such as natural pest eliminators get destroyed [as detected for cotton in Punjab and for paddy in Andhra Pradesh and Karnataka—CSE, 1985-86]. Clearly, the 'man-made' environmental crisis will constrain the long-term sustainability of current agricultural growth strategies. It is noteworthy that the trend growth rate of agricultural GDP between 1966-67 and 1974-75 was lower than between 1974-75 and 1983-84 (2.95 and 2.39 respectively), and the extent of yearly fluctuations considerably higher [Sundaram 1987:37].

The issues this raises are thus larger and wider than just that of the unequal distribution of the product. What is in question is the very nature of the product and the mechanism by which decisions (political and technical) associated with its production are

reached. Today in socialist countries such as China too, similar problems of deforestation, desertification, salination, recurrent secondary pest attacks on crops, food contamination with pesticides, etc, are emerging [Glaeser, 1987]. The issue of equality impinges on this not in the narrow sense of the distribution of that which gets produced, but in the wider sense of what developmental perspectives, powers and processes inform and underlie decisions on *what* to produce, and *how*—that is, with whose acquiescence, understanding and participation.

It is in this context that the knowledge and perspectives of poor peasant and tribal women become significant, since it is they with their specific responsibility for family sustenance, and their close and constant interaction with forests and land, who are most closely concerned with the process of conserving life in nature. So far, existing development strategies have made little attempt to tap this understanding and knowledge (or indigenous knowledge in general), indeed it has been devalued, and is today being systematically wasted by the noted forms of appropriation of nature's resources.

V

Women's Grassroots Responses

In the process of systematic alienation from the means of survival described thus far, those affected have by no means usually been passive victims. Indeed, historically, protests directed at those seen as responsible have been common, including tribal protests against British encroachments and takeover of the forests in the late 19th and early 20th centuries, and peasant movements against feudal and colonial control over land and produce, such as the Tebhaga movement of sharecroppers in West Bengal (1946-50), the Warli tribal revolt in Maharashtra (1945-47), and the Telengana struggle in Andhra Pradesh (1946-51). However, in these movements, while women were active participants and the issue of gender oppression also surfaced, there was no organisational framework within which women's specific concerns could systematically be discussed and articulated. It is especially in this respect that the developments in the 1970s are of particular interest. This period has witnessed (a) the emergence of a large number of grassroots, non-party initiatives involving tribals, *dalits*, the poor, and especially women in these communities, around issues such as land, wages, upper-caste oppression, and ecology; (b) a growing recognition in many of these groups as well as in other organisations of the rural poor that originated prior to the 1970s, of the need to take cognisance of gender issues, typically articulated via women's committees in these organisations; (c) the emergence of separate women's groups; and (d) the focus on poor women's specific concerns in the women's associations linked to the left-wing political parties.

Some illustrative examples of struggles around gender issues launched by non-party organisations representing both men and women, but with separate women's committees, are the following:³⁵

- the struggles by women of agricultural labour and sharecropping households for independent (as opposed to jointly with husbands) rights to land, in the course of the Bodhgaya movement initiated in 1975 by the *Chhatra Yuva Sangharsh Vahini*;
- the agitation by Bhil tribal women belonging to the *Shramik Sanghathana* (toiler's organisation) initiated in 1972 in Shahada taluk, Dhulia district (Maharashtra) and covering over 200 villages in 1981, against low and unequal wages, inadequate employment, gender violence within the home and by landlords, and (over the last two years) environmental degradation and deforestation;
- the struggle of poor women belonging to the *Comprehensive Rural Operations Service Society* (CROSS) formed in 1976-77 in Nalgonda district (Andhra Pradesh), which by 1981 had organised women's groups in over 84 villages, for higher wages, land, and access to government economic programmes, and against male alcoholism and domestic violence;
- the agitation of rural *dalit* women belonging to the *Vivasaya Cooligan Iyakkam* (VCI, Landless Labour Associations) which by 1981 covered 5 districts and has 15 associations with 3,000 members each, against low wages, rape and other forms of caste oppression, including the barring of low-caste women from community wells and ponds used by the upper castes.
- the revolt of low caste, poor rural women against sexual exploitation by landlords in parts of the Telengana region (Andhra Pradesh) via *Mahila Sangams* (women's groups);
- women's resistance against male alcoholism and deforestation and their concerted efforts towards environmental development through the *Chipko Andolan* in the hills of Uttar Pradesh.

Women's association linked to specific political parties have also been active on many of these fronts.³⁶

In addition, there has been a growth of solely women's organisations such as the *Self-Employed Women's Association* (SEWA), initiated in 1972 as a trade union for taking up the problem of women's economic survival in the urban informal sector of Ahmedabad city, but which has since branched into the rural areas of Gujarat and elsewhere as well; the *Working Women's Forum* (WWF), an organisation of poor women in the informal sector, started in 1978 in Madras city, but which has since spread to the urban and rural areas of several states and was estimated to have 25,000 members in 1984; women's groups that have launched anti-liquor campaigns in the villages of Manipur and Himachal Pradesh, and so on.³⁷ In this context, it is also relevant to take note of the emergence of several urban-

based women's groups which are raising a voice against issues such as escalating dowry demands, domestic violence, and the negative portrayal of women in the media, and are pressurising too for changes in existing laws and legal processes. The efforts of such groups are of significance beyond their immediate urban context, that is, for rural women as well, insofar as they can affect the law and make an impact on prevailing ideologies.

Grassroots initiatives have also effectively brought out the close inter-relationship between economic and social oppression in poor women's lives as experienced both within the family and outside it. For instance, it is not an accident that many rural women's campaigns for better wages, land rights, etc, have either followed in the wake of an anti-alcoholism campaign, or this issue has arisen as a major one in the course of other agitations. Male alcoholism has been associated on the one hand with violence within the family and on the other with a substantial drain on the family's meagre income, in poor households. In Himachal Pradesh one bottle of country liquor is noted to cost Rs 28 as against the minimum wage of Rs 12 for agricultural labour, and drink-related indebtedness is common [Mendhapurkar, 1987]. In Punjab an average household with a heavy drinker is found to spend 40 per cent less on food per capita and less on clothing, education and medicine as well, than a 'non-drinker' household [Deb, 1977 quoted in Harriss, 1986]. Women in an anti-alcoholism campaign in Himachal Pradesh observed:

Our men go to market to sell vegetables or spend their days working on the roads but what do we ever see of the money? It all goes on liquor before they reach home in the evening. When they do come back drunk, they beat the children and then complain that there is no food for the evening meal. Where can we get food if there is no money in the home? [Mendhapurkar, 1987: 29].

For low-caste, poor families, cultural and economic oppression has always been intertwined, but gender constitutes a dimension in addition to caste and class. For instance, sexual harassment and rape have been significant weapons in the hands of landlords to suppress female militancy, and also the militancy of the men 'dishonoured' by the violation of the women in their families. Again, taboos against the use of community wells and ponds on grounds of untouchability affect especially the women who have to fetch the water. The storming of the village pond by *dalit* women who were members of VCI in Tamil Nadu was an assertion both of their social rights and of their rights to common property-resources. Mies et al [1983: 19] note that Nalgonda (Andhra Pradesh) women, who were members of CROSS "clearly saw the connection between the landlord's contemptuous and high-handed behaviour and their own lack of bargaining power".

Even to participate in organised struggle

for *economic* betterment women typically have had to confront obstruction from within their own homes and communities. For instance, to attend organisation meetings, women have had to face the disapproval and often the wrath of their husbands; it is not easy to negotiate with them to take responsibility for childcare and housework so that wives can attend discussions that require overnight stays in women's camps; in mixed male-female meetings attitudes such as "why call the women, we'll decide" are commonly encountered, and so on. In this context, Mies et al's [1983: 19] insight on the basis of their work in Andhra Pradesh has general validity: "It is often argued that poor women need 'bread' first, only then can they think of 'emancipation'. This view ignores the fact that these poor women *will not even get bread if they do not fight for their emancipation*. The Bhongir women have shown that their struggle for better economic conditions is linked inseparably with their struggle for human dignity and self-respect" (emphasis mine).

On the whole, grassroots efforts have had a noteworthy success in highlighting the multi-tiered nature of gender oppression and in affirming the strength of unity for resisting it. There have been some immediate economic gains as well. Due to the Bodhgaya struggle, for instance, in 1981 some 1,500 acres earlier illegally controlled by the *Math* was formally distributed to the labourers by the government, of which 150 acres in two villages was distributed only in women's names. Again, organisations such as SEWA and WWF have had a significant success in improving the economic position of women members especially through their credit schemes. Indeed even simple income-generating schemes have a greater chance of enhancing women's earning capabilities when directed through a *group* approach rather than the individual-oriented approach that has typified the government programmes (including those initiated under the banner of poverty alleviation). For instance, problems of procuring raw materials and marketing faced by individual women under TRYSEM (the government's skill training programme for poverty alleviation) could be resolved more economically if loans and infrastructural support for setting up self-employment units were provided to groups of women. In fact a group approach is central to the schemes of credit disbursement to women in the informal sector undertaken by organisations such as the WWF, whereby women organised into small groups are issued loans in individual names but with group liability, which ensures both timely repayment, and group support as well as concern with the taking up of viable projects. [The Grameen Bank in Bangladesh is again a significant example for the rural poor, and especially for women, see eg, Agarwal, 1988a.] Small size and class/caste homogeneity is found to be important for ensuring the successful functioning of such groups,³⁸ which have the potential for forg-

ing unity to raise non-economic gender-related concerns as well.

In general, grassroots initiatives clearly provide a potential for change in the immediate local context, even though their wider impact remains to be seen. Their significance however lies not just in this, but in their raising vital questions about the nature of economic development itself. This is especially so in the case of ecology movements which severely indict the present path of development not only on distributional grounds but on grounds of its very sustainability, and articulate not only a critique but also, in their immediate local context, the possible path to a more sustainable and equitable way of satisfying people's needs.

The past decade, in particular, has seen the buildup of an increasing resistance to ecological destruction, whether caused by direct deforestation (which is being resisted through movements such as *Chipko* in the Garhwal hills and *Appiko* in Karnataka), or by large irrigation and hydel works, such as the Narmada valley project covering three states in central India, the Koel-Karo in Bihar (against which the tribals of the *Jana Sangathana* have been agitating), the Silent Valley Project in Kerala (which was shelved after strong protests in 1983), the Inchampalli and Bhopalpatnam dams in Andhra Pradesh (against which 5,000 tribals, with women in the vanguard, protested in 1984); and the controversial Tehri dam in Garhwal.

In this context, the *Chipko* movement needs a particular highlighting, both as a movement of considerable historical importance, and as a significant expression of hill women's specific understanding of forest protection and environmental regeneration. The movement was sparked off in 1972-73 by the action of the people of Chamoli district against the auctioning of 300 ash trees to a sports goods manufacturer, while the local labour co-operative was refused permission by the state to cut even a few trees, to make agricultural implements for the community. Women have been actively involved in the movement and there are several noteworthy features of their involvement that need highlighting here.

First, women's protest against the commercial exploitation of the Himalayan forests has been not only jointly with the men of their community when they were all confronting non-local contractors, but since then, in some instances, even in contradiction to the wishes of the village men due to differences in priorities about resource use. Time and again women have clear-sightedly opted for saving forests and the environment over the short-term gains of development projects with high environment costs, e.g., saving the oak forest in Dungari-Paitoli that was to be felled to set up a potato-seed farm project that the men supported.

Secondly, women have been active and frequently successful in stopping tree auctions and in keeping a vigil against illegal

falling. In the hamlet of Kangad, and in Gopeswar town, for instance, they have organised a co-operative system of guarding the forests themselves. In Gopeswar town, to protect the surrounding forest, the local women's group has appointed watch women, who receive a wage in kind to keep guard and regulate the extraction of forest produce by villagers; twigs can be collected freely but any harm to the trees is liable to punishment.

Thirdly, replanting is a significant component of the movement, as also graphically highlighted in their slogans and songs: "Wherever you see a vacant space, plant trees— fodder trees, oak trees, trees with broad leaves."

"Come plant new trees, new forests,
Decorate the earth.
Come relieve the land of the crisis
Come all join together".

But in their choice of trees the priorities of women and men don't always coincide— women typically prefer trees that provide fuel, fodder and daily needs, and men commercially profitable ones. (This gender divergence has also been noted in other contexts, e.g., Rajasthan, see Brara, 1987.)

Fourthly, *Chipko* today is more than an ecology movement—it has grown into a wider movement against gender-related inequalities. For instance, there has been a large-scale mobilisation against male alcoholism and associated domestic violence and wasteful expenditure; and many women are today asking: Why aren't we members of the village councils?

Fifthly, the resistance to felling is not only to save their sources of daily sustenance, but to prevent disasters such as the landslide that blocked the Alaknanda river and caused a major flood in 1970, inundating 1,000 sq km and washing away villages, bridges and roads.

The women have in fact brought to bear on the movement their holistic ecological understanding of forests not just as providers of essential products, but closely interconnected with and necessary for regenerating the ecosystem as a whole. This is graphically brought out by the women who poetically present, in the form of a dialogue between themselves and the foresters, two counter views on forest resources:

The Foresters: Do you know what the forests bear?

Profits, resin and timber.

The Women: What do the forests bear?
(in chorus) Soil, water and pure air.

Soil, water and pure air
Sustain the earth and all she bears.³⁹

It is this clear recognition of the inter-relatedness and inter-dependence between various material components of nature, and between nature and human sustenance, that marks out women's perspective in ecology movements.

Indeed ecology movements may be seen as cries against a reductionist view of forests

and an affirmation of the ecological view "as civilisational responses to a development model based on ecological destruction on the one hand and poverty creation on the other [Bandhyopadhyay and Shiva, 1987]; and as "struggles of the dispossessed, the marginalised, the victims of discrimination, among whom can be counted the women, the tribals and the non-commercial farmer... aimed at conserving nature's balance in order to conserve their means of survival" [Shiva, 1986: 256].⁴⁰

At the same time, the movements need to be contextualised. In this respect, first of all, what is noteworthy is that they have emerged primarily in hill or tribal communities, marked by relatively low levels of class differentiation and therefore with a greater potential for wider community participation, less subject to the tensions associated with hierarchical social groupings that tend to splinter village communities in much of South Asia. Community mobilisation in general and women's participation in particular may be expected to be much more difficult to bring about in a context of greater class and gender differentiation. Also in these communities, women's role in agricultural production has always been *visibly* substantial and often primary—an aspect more conducive to their public participation than in many other communities in north India practising varying degrees of female seclusion.

Second, the role of poor peasant and tribal women in ecology movements becomes significant not so much because they are women *per se* but because they, more than perhaps any other group, still maintain (even if one would argue *perforce*, given the sexual division of labour) a reciprocal link with nature's resources. In my view this contextualising becomes especially necessary as a caution against reading women *as nature* into an argument which is essentially tracing the links between women *and* nature. In other words, the links between women and ecology may be seen as socially and culturally constructed and not biologically determined.

VI

Concluding Comments

This paper has argued that tribal and poor peasant women, through a reciprocal, creative and non-violent interaction with nature, have been significant providers of family subsistence. However, this provisioning has been in the face of considerable odds given, on the one hand, women's grossly unequal access to productive resources, especially land, technology, control over social and political space and decision-making, employment and other income-earning opportunities, even the basic means of self-reproduction—food and health care; and, on the other hand, the rapid depletion, due to over-exploitation, of nature's resources—forests, soil, water...What we ap-

pear to be facing today is a scenario not only of high socio-economic inequality but also of a growing destruction of nature, of people dependent most critically on nature (the tribals, poor peasants, and especially women in these communities), and of the knowledge that such people possess of nature.

While there is widespread grassroots resistance to these inequities and nature's destruction—to the processes, products, people, power and profit-orientation that underlie them—the voices of this resistance are yet too scattered to impact politically beyond the immediate local context. At the same time, their message cannot be ignored, even from a purely growth and productivity concern, and even less so if our concern is with people's sustenance and survival.

The experiences of women's initiatives, in particular, provide many insights not only into the politics of organising women at the grassroots level but also of their responses to poverty and patriarchy. What is perhaps of particular note in the context of this discussion is that (a) women's militancy is much more closely linked to family survival issues than is men's; (b) an improvement in the economic conditions of women's lives is critically connected with a reduction in the so-called social and cultural forms of subordination as well—the struggle is not just for bread but also for human dignity, and indeed the success in the one is dependent on the success in the other; (c) implicit in these struggles is therefore the attempt to carve out a space for an alternative existence that is based on equality not dominance over people, and, especially in ecology movements, on co-operation with and not dominance over nature.

Indeed what is at issue today is entire developmental paradigm—with its particular product and technological mix, its forms of exploitation of natural and human resources, and conceptualisation of the future. However, the recognition that there are deep inequalities and destructiveness inherent in our processes of development is not enough, if policy continues to be relief-oriented towards both nature's ills and people's welfare, if the solution to nutrient-depleted soils is seen to lie in externally-added chemical nutrients, to depleting forests in monoculture plantations, to drought starvation in food-for-work programmes, to gender inequalities in *ad hoc* income-generating schemes for women, and so on. These solutions are ultimately neither curative nor preventive.

The realistic posing of an alternative (quite apart from its implementation) is of course not easy. What is clear so far are its broad contours: *that it needs to be transformational rather than welfarist*—where development, redistribution and ecology link in mutually regenerative ways; and that we would need to go beyond the demand for a mere redistribution of the 'loaf' (or of 'entitlements' to it) to a change in:

—the loaf's very *composition* (e.g., from eucalyptus to deciduous trees,

monocultural tree plantations to mixed forests);

- the *technologies* used to produce it (purely chemical to more organic farming; monocultural HYVs to mixed farming with indigenously produced varieties; large-scale irrigation projects to a combination of tanks, small dams, etc);
- the *processes* by which decisions on its composition and its production technology are arrived at (top-down to participative, gender unequal to gender-egalitarian);
- the *knowledge* through which it is produced (laboratory-based, expert-dependent, to interactive with women, poor peasants and tribals);
- the *form* by which nature's resources are appropriated (violent, exploitative to non-violent, regenerative);
- and its very *size*.

The transcreation of this into specific policies and programmes remains the major development task ahead.

Notes

[This is a substantially shortened and revised version of a paper presented at a workshop on 'Poverty in India' held at the Queen Elizabeth House, Oxford, October 1987. It is forthcoming (in somewhat modified form) in R Cassen and S Guhan (eds): *Poverty in India* (Oxford: Oxford University Press). I am grateful to Judith Heyer, Ramachandra Guha, Jayati Ghosh, Raghav Gaiha, S M Agarwal, Madhura Swaminathan and the participants of the Oxford workshop for comments on the earlier version].

- 1 Martin and Voorhie's [1974] analysis based on Murdock's [1967] ethnographic atlas indicates that among 90 present-day hunting-gathering societies, in 58 per cent subsistence comes primarily from gathering, in 25 per cent from hunting, and in the rest from both, and/or fishing.
- 2 The shift is associated variously with the advent of plough cultivation [Childe, 1942], the emergence of private property [Engels, 1977], the establishment of control over women's reproductive potential, and over theirs and their children's labour [Meillassoux, 1981; Lerner, 1986], the exchange and reification of women [Levi-Strauss, 1967], the devaluing of nature by culture [Ortner, 1974], etc. Some view these associated factors as causal. For instance Childe [1942:89] notes: "The plough... relieved women of the most exacting drudgery and deprived them of their monopoly over the cereal crops and the social status that conferred". Engels [1977] argues that the emergence of private property, initially in herds (made possible by the domestication of animals by men) "on the one hand, gave the man a more important status in the family than the woman and, on the other hand, created a stimulus to utilise this strengthened position to overthrow the traditional order of (matrilineal) inheritance in favour of his children". Lerner [1986], however, notes that animal husbandry was often associated with egalitarian

societies, and argues *a la* Meillassoux that control over female reproduction (and sexuality) preceded the emergence of, and indeed was an essential means for establishing, private property.

The means used to establish control over women is seen by some as involving violence, especially sexual coercion [Fisher, 1979; Meillassoux, 1981; Mies, 1986], and by others as the gradual cultural entrenchment and institutionalisation of the sexual division of labour that was initially biologically necessitated—women being the bearers of children [Lerner, 1986]. Be that as it may, what is apparent is that it led over time to a loss of women's primary role in cereal production, their access to land, and their control over technology and indeed over their own labour power, without at the same time, reducing, for the majority, their responsibility as significant providers of family sustenance. For a minority, the emergence of a class society enabled the substitution of their labour by that of other women and men.

- 3 This noted in rural health surveys for Maharashtra and Gujarat [Dandekar, 1975], West Bengal [Chakraborty et al, 1978] and Uttar Pradesh [Khan, et al] although not in Tamil Nadu [Mcneil, quoted in Harriss, 1986].
- 4 The hospitals are urban-based, and the studies do not indicate whether the patients are from the rural or urban areas. But one would expect higher gender differentials in admissions among rural patients, as the cost of bringing the child to the hospital is greater.
- 5 Among other things, female children are breastfed for a shorter period and given less supplementary milk and solid food [see Levinson, 1974, for Punjab; and Caldwell and Caldwell, 1987, for Karnataka].
- 6 For instance, Sen and Sengupta's [1983] fieldwork in two West Bengal villages revealed gender differentials in under-nourishment and growth dynamics of children under five to be greater in landless than landed households; Ryan et al [1984] found discriminatory food allocations only among the poor households during the lean season in Andhra Pradesh; Rosenzweig and Schultz's [1982] household-level survey for all-India showed that gender differentials in child survival were more among the landless than the landed, although the district-level analysis revealed otherwise.
- 7 Harriss [1986] on the basis of her survey, discussed above, argues that "our material evidence, by not demonstrating conclusively that malnutrition is a result of intra-family food distribution (rather than a result of poverty) also redirects our concern to entitlement at *the level of the household*" (my emphasis). This conclusion, which would have significant policy implications, appears unwarranted, both because Harriss's nutritional data (as noted) is by no means entirely inconclusive at a disaggregate (by region and class) level, and because intra-household food allocations constitute only *one* element in gender differentiation affecting female well-being and survival. On health care, as noted, discrimination cuts across regions, even though varying in

- degree cross—regionally. Harriss herself notes: "No ambiguity surrounds female disadvantage in the treatment of disease".
- 8 See Dasgupta and Maiti [1986] for Himachal Pradesh, Madhya Pradesh, Uttar Pradesh, Maharashtra and Assam; and Gulati [1978] for Kerala.
 - 9 As compared with the previous year and subsequent years, 1974-75 was not a particularly good year in terms of agricultural production. Nevertheless, relative to 1964-65 it represented a noteworthy increase of 11.6 per cent in the total quantum of foodgrains produced.
 - 10 The agricultural labourers' cost of living index increased by almost 160 per cent between 1964-65 and 1974-75.
 - 11 This is defined variously in different studies: some define it as per cent of female workers to total female population; others, such as Miller [1981], as per cent of female workers in the age group 15-59 to female population in that age group.
 - 12 However, this is not a one-to-one relationship, that is, while districts where FLP is high are also those where gender disparities in child survival are low, districts where FLP is low, are not necessarily those where gender differentials are high.
 - 13 For instance, Bardhan [1984] argues that the north-south difference in discrimination against females relates to the greater demand for female labour generated under rice cultivation which characterises much of southern and eastern India, than under wheat cultivation which characterises the north. However, the rice/wheat dichotomy proves inadequate as an explanation in that while female labour participation is generally lower in the traditionally wheat-growing belt of the north-west relative to the rice-growing south, there are also considerable variations between rice regions in women's involvement in agriculture, with women's participation in the eastern states being low and close to that in the wheat-growing north-west. Miller [1981] focuses on the rice and millet vs wheat differences.
 - 14 These estimates are based on the 37th round of the National Sample Survey (NSS) carried out in 1981-82. According to the survey, 66.5 per cent of land owning households in rural India owned 1 ha' or less and accounted for only 12.2 per cent of all land owned by rural households [NSSO, 1987]. The distribution of *operational* holdings is almost as skewed [NSSO, 1986].
 - 15 See, for instance, Ali et al [1981], Sundaram and Tendulkar [1983], Gaiha and Kazmi [1981]. Estimates by Ali et al, [1981], quoted in Sundaram, 1987], for 1975 indicate a consistent decline in the percentage of rural population below the poverty line as operational holding size increases (see Table A). Sundaram and Tendulkar [1983] on the basis of NSS data for 1977-78 find that the incidence of poverty among households dependent mainly on agricultural labour for a livelihood was almost twice that among cultivating households (58.8 per cent relative to 30.1 per cent). Gaiha and Kazmi [1981] again found the highest risk of poverty among agricultural wage labour households on the basis of the NCAER data for 1971-72.
 - 16 Lipton [1983: 44] in a survey article on labour and poverty provides several examples from rural India on the three-way link between land shortage, unemployment and poverty. For instance, a ten-village survey covering 100 agricultural labour households in Andhra Pradesh in 1972 showed that the risk of extreme poverty and unemployment was much lower among the 32 households which had a little cultivable land relative to the 68 which had none. A four-village study in Gujarat in 1970-71 likewise found a 25 per cent higher risk of unemployment among the landless relative to the landed households. Again, ICRISAT research in 6 semi-arid villages showed that the prospects of female employment were much better among small and medium farm households relative to landless agricultural labour households. Also, in Visaria's [1978] study in rural Gujarat, unemployment for woman was found to be 70-80 per cent higher than for men among landless households, but fell about twice as fast with every extra acre.
 - 17 See, for example, Raj and Tharakan [1983] for Kerala where the implementation of land reforms gave many agricultural labour households full ownership rights to small sized holdings of less than 1 acre in the 1970s.
 - 18 For a useful review of literature on land and poverty see Lipton [1983 and 1985].
 - 19 For a more detailed discussion on the gender inequalities inherent in the traditional and existing laws of inheritance of various communities, but especially the Hindu and Muslim, see Agarwal [1988a].
 - 20 For instance, this was traditionally so among the Garos, Khasis and Lalungs—the three main matrilineal tribes of the north-east, as well as among the matrilineal Nayars of central and southern Kerala, the Mappilas of northern Kerala, and the Nangudi Vellalars of Tamil Nadu.
 - 21 For a detailed discussion on the factors underlying the decline of matrilineal inheritance patterns in the tribal north-east see Agarwal [1987a].
 - 22 For a detailed discussion on this see the 'Introduction' in Afshar and Agarwal [1988].
 - 23 In Madhya Pradesh (which has the largest concentration of tribals in the country) 13.6 to 38 per cent (varying by region) of total tribal income is estimated to come from MFP; in Andhra Pradesh 10-55 per cent; and in parts of Gujarat 35 per cent (GOI, 1982). In Orissa, 13 per cent of the forest population is estimated to subsist exclusively on MFP and for another 39 per cent it is an important secondary source of income [CSE, 1985-86: 91].
 - 24 In the Coimbatore region of Tamil Nadu, the water level has fallen by 25-30 metres over the past 10 years [Jayal, 1983: 83]. In the Kolar district of Karnataka it has fallen below 200 metres [Bandhyopadhyay, 1986] and in Mahsana district of Gujarat, the depth of the tubewell bore is now about 300 metres relative to about 90 metres 20 years ago [Dhawan, 1982: 54]. Similar trends are noted in parts of Punjab, Haryana and Uttar Pradesh [Dhawan, 1982: 150].
 - 25 In Nagaur and Jodhpur districts of Rajasthan, 59 per cent to 62 per cent of the privatised commons went to farmers owning 10-15 ha or more, and included 90 per cent of the good quality land; while the landless got 11-13 per cent of the land—much of it of poor quality [Jodha, 1983].
 - 26 A three-village study in the Uttar Pradesh hills found that the amount of human energy expended on fuel and fodder collection was 2-5 times that spent on cultivation [CSE, 1985-96: 180].
 - 27 The IRDP or Integrated Rural Development Programme was initiated in 1981-82, as a means of integrating under a single programme, the hitherto multiplicity of schemes directed to benefit the rural poor and implemented through a variety of agencies. Its basic components are a loan-cum-subsidy scheme for purchase of milch cattle, etc, and TRYSEM (Training Rural Youth for Self-Employment) for imparting practical skills to 18-35 year olds of the poorest households, and to equip them for taking up self-employment ventures. Women receive a specific focus in these schemes.
 - 28 This was found in Bulandshar, UP, in the course of a DANIDA (India) project—Chitra Sundaram, personal communication.
 - 29 In China, women doing agricultural labour in the cotton-growing areas were found to have DDT concentrations in their milk of up to 0.273 p p m and BHC concentrates up to 0.472 p p m. The maximum concentration permitted for cow's milk for both substances in 1978 was 0.1 p p m [Wagner, 1987].
 - 30 See Schrijvers [1987] on the Mahaweli scheme in Sri Lanka, Hanger and Moris [1973] on the Mwea Scheme in Kenya, and various writings on the Muda scheme in Malaysia.
 - 31 For an excellent discussion on forest policy and forest exploitation under the British see Guha [1983]. Also see Pandian, [1987].
 - 32 In Bihar, the forest department sought to replace a mixed forest by monoculture teak [Makhijani, 1979]; in Uttar Pradesh, shesham and sal were cut to plant eucalyptus [Dogra, 1981]; in Bastar (Madhya Pradesh) under a World Bank project, 40,000 ha of deciduous forest were to be clear felled for planting tropical pine—the scheme was shelved following public protest [D'Monte, 1982]. In Uttara Kannada district of Karnataka, the forest department

TABLE A

Size Class	Per Cent Share in Rural Population	Per Cent Below the Poverty Line (2250 Calories)
0.00	12.3	81.7
0.00-0.50	18.6	75.4
0.51-1.00	15.7	67.0
1.01-2.02	18.5	57.0
2.03-4.04	16.3	45.3
4.05-8.09	10.7	31.7
8.10 and above	7.9	4.5
All	100.0	100.0

Source: Sundaram [1987: 179].

- clear felled 40,000 ha of natural forest cover to plant hybrid eucalyptus without proper trials [Chandrashekhhar, 1987].
- 33 In Midnapore district (West Bengal), eucalyptus was principally planted on tribal paddy land by the forest department [*Indian Express* 1983]. Elsewhere, in Madhya Pradesh, community forest land containing ground for grazing, for holding the annual fair, a pond, and stone quarries that provided the villagers employment, was fenced off to build a game sanctuary [Sarin, 1980].
- 34 In Karnataka in 1982-83 some 63.3 per cent of land previously under foodgrains in Kolar district and 49.6 per cent in Bangalore district, is estimated to have shifted to eucalyptus, leading to a substantial decline in the production of ragi, the staple crop of the poor [Chandrashekhhar, 1987, quoting estimates of the Directorate of Economics and Statistics]. In Kolar district alone, the area under ragi declined from 14.8 thousand ha in 1977-78 to 48.4 in 1980-81, a decline by 66 per cent while production fell from 175.2 to 13.3 thousand tons—a decline by 92 per cent [Shiva, 1988: 81].
- 35 See, Manimala [1984] on the Bodhgaya movement; Savara and Gathoskar [1982] on the Shahada struggle; Burnad [1983] on the *Vivasaya Cooligan Iyakkam*; Mies, et al [1983] on CROSS; Bandhyopadhyay and Shiva [1987], Jain [1984], Bahuguna [1984], Dogra [1984], Joshi [1983] and Shiva [1988] on the Chipko movement.
- 36 See Vaid and Patel [1984].
- 37 On SEWA see Sebstad [1982]; on the WWF see Noponen [1987]; and on the anti-liquor campaigns in Manipur and Himachal Pradesh see Jain [1984] and Mendhapurkar [1987] respectively.
- 38 See, Dixon [1979] for a good discussion on this with several illustrative examples from south Asia. Also see PIDT [1982] and Agarwal [1988b]. These characteristics (among others) of users are also found important in examples of successful collective action by villagers for regulating the use of common property resources [Wade, 1987].
- 39 Quoted in Shiva [1988].
- 40 See, also Immer [1986]; Omvedt [1984]; and Singh [1986].
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NOTICE

It is hereby notified for the information of the public that **The Hooghly Flour Mills Company Limited** proposes to make an application to the Central Government in the Department of Company Affairs, New Delhi, under Sub-Section (2) of Section 22 of the Monopolies and Restrictive Trade Practices Act, 1969 for approval to the establishment of a new undertaking/unit/division. Brief particulars of the proposal are as under:

1. Name and Address of the Applicant : **The Hooghly Flour Mills Company Limited**, 4, Bankshall Street, Calcutta 700 001.
2. Capital Structure of the Applicant Organisation:

<u>Authorised</u> — Ordinary:	Rs. 30,00,000
<u>Subscribed</u> — Ordinary:	Rs. 27,00,000
3. Management structure of the Applicant Organisation indicating the names of the Directors, including the Managing/Whole-time Directors and Manager, if any: Mr. K. R. Chhabria, Chairman, Mr. K. C. Mathur, Mr. R. S. Johar, Mr. D. P. Mukherjee, Mr. M. Ghose, Mr. R. K. Venkatesan. (There is no Managing/Whole-time Director and Manager)
4. Indicate whether the proposal relates to the establishment of a new undertaking or a new unit/division: New undertaking. (Commencement of trading activity in Bakery Oil, Biscuit, Ammonium Bicarbonate, Baking Powder, Calcium Propionate, Bread Improver).
5. Location of the new undertaking/unit/division: 20, Round Tank Lane, Ramkristopur, Howrah-711 101, Gauhati—H.P. Brahmachari Road, 1st Floor, Rehabari, Gauhati-781 008, Delhi—Gulab Bhavan, 6, Bahadur Shah Zafar Marg, New Delhi-110 002, Bangalore—Post Box 7089, 2303, 21st Cross, K. R. Road, Baneshankari, II Stage, Bangalore 560 070.
6. Capital Structure of the proposed undertaking: Same as in item 2.
7. In case the proposal relates to the production, storage, supply, distribution, marketing or control of any goods/articles indicate:

Name of goods/articles: Bakery Oil, Biscuit, Ammonium Bicarbonate, Baking Powder, Calcium Propionate, Bread Improver.

Proposed Licensed Capacity: Not applicable for any of the goods/articles

Estimated Annual Turnover: The applicant intends to commence trading business relating to items specified under Cl. (i) and the total estimated turnover in this respect will be around Rs. 1121 lacs p.a. against which the applicant shall get commission.
8. In case the proposal relates to the provision of any service, state the volume of activity in terms of usual measures such as value, income, turnover etc.: Not applicable
9. Cost of the Project : Rs. 5 lacs.
10. Scheme of finance, indicating the amounts to be raised from each source: Will be raised from internal resources of the Company and bank borrowing.

Any person interested in the matter may make a representation in quadruplicate to the Secretary, Department of Company Affairs, Government of India, Shastri Bhavan, New Delhi, within 14 days from the date of publication of this Notice, intimating his views on the proposal and indicating the nature of his interest therein.

For **The Hooghly Flour Mills Company Limited**

R. MUKHERJEE
SECRETARY

Dated this 23rd day of October 1989