

CATTLE-DUNG AND DUNG-WORK

An Aspect of the Value of Women's Work in Rural North India*

ROGER JEFFERY, PATRICIA JEFFERY AND ANDREW LYON

The centrality of the bullock to Indian agriculture, and the cow to Hindu conceptions of the sacred, is often noted, and the question of whether or not Hindu values lead to an excess of cattle in India was hotly debated in the journal *Current Anthropology* 20 years ago (Harris, 1966; Heston, 1971). Sau (1988) has gone so far as to term the kind of capitalism that developed in Indian agriculture in the 1960s and 1970s "cow-dung capitalism". In these discussions, however, the role of women as the managers of cattle and cattle products, especially of the dung, has not been given the attention it warrants. Only recently have explicitly feminist writings addressed the contributions of women's apparently "non-productive" work to the agrarian economy, or (at a symbolic level) the parallelisms between men's treatment of bullocks and of women (Kemp, 1986). Even within this literature, we would argue, the meanings and value of dung-work have not been fully explored. The most common response is to locate such work in an ecological system, and to deplore the waste of organic fertiliser through the use of animal products for fuel. Lockwood Kipling's vivid description of the work involved, and its evaluation by agricultural experts, epitomises the views of many more recent discussions:

India is so poorly off for fuel that the droppings of the cow have become one of her most highly prized products, carefully collected and stored. Some observant tourists have recognised in the universal preparation of cow peat or *bois de vache* the characteristic national industry. The collection of the raw material, its mixture with fragments of straw and other combustible refuse, and, after kneading with water, the clapping of each

* Earlier versions of this paper were presented in Oxford, Edinburgh, Birmingham, Glasgow and Venice: we are grateful to colleagues for comments and encouragement to take the argument as far as we have. A slightly different version of this paper has been published in *Economic and Political Weekly* (Vol. XXIV (Review of Women's Studies), April 1989) under the title "Taking Dung-work Seriously".

finger-printed pat against a wall, rock, or other sun-visited place in a bold diaper pattern is the first occupation of the poor girl, the last of the poor old woman. Authorities on Indian agriculture lie awake o' nights weeping over the loss to the soil caused by this industry ... (J. L. Kipling, 1891, p. 165).

Despite the omnipresence of cattle-dung, we would argue that it and its transformation (dung-work) have not received the attention they deserve, in part as a result of male-oriented approaches to agriculture; *pace* Thorner and Sau, men dominate the agriculture but will not go anywhere near the cattle-dung. In this paper we use cattle-dung and its place in the life of two north Indian villages to throw light on some aspects of agrarian organisation which have been unduly neglected.

Because our own research did not concentrate on cattle-dung or dung-work, this paper must be seen more as some suggestions for further research than as a report on research that has been completed. The topic came to our attention as a by-product of our research on the social organisation of childbearing and women's work.¹ Like others before us, we have had to overcome a tendency on our own part to treat the topic as a humorous one, and this paper is partly in expiation of our earlier levity.²

Recent feminist literature has addressed "shitwork" in the West. Literally, it refers to dealing with a baby's excreta and its consequences - washing a baby, its soiled nappies and clothes. Metaphorically, feminists have used the term to describe the general servicing work done by women, either at home or in wage labour - the preparation of food, cleaning, dusting, washing, sweeping. Such work rarely allows women direct access to or control over resources, or over the wealth or income such work helps to produce or maintain. Indeed, the term demeans the activities performed and renders them appropriate only for low

1 This research was funded by the Economic and Social Research Council, London, for field-trips in 1982-3 and 1985; for further details see P. M. Jeffery et al, 1989.

2 We are not alone in succumbing to this tendency: Michael Lipton contributed the following poem to R. Wade, 1987, p. 65:

Of excremental capital/output ratios

For millet, the neighbourhood baddy,
Abetted, I fear, by his daddy,
Steals the shit of the sheep
While the field guard's asleep,
But pigshit is better for paddy.

status menials.³ Shitwork is largely invisible, undervalued, and often ignored, and thus can stand as a metaphor for most of women's work in childbearing and childrearing - messy, female and understudied. "Shitwork", in both senses outlined above, occupies a substantial part of the work of women in villages in north India. Here, however, we focus on a third sense: the work done with cattle-dung, "dung-work" (in Hindi: *gobar ka kam*).

An important part of the purpose of the Western feminist discussions was to take the work women do - here their dung-work - out of the shadows, to add it to a listing of people's activities and to reject the traditional methods of accounting which make it invisible. Here, however, we take the point further, in three directions. Firstly, we use the example of women's work in relation to cattle-dung to show the analytical inappropriateness of the conceptual split so commonly made between "production" and "reproduction", and the public and private spheres. Secondly, making women's dung-work the starting point and tracing out the ramifications from it provides a slightly unusual way into more substantial, ecological critiques of the concept of development. Thirdly, the example of dung-work can contribute to the debates over the relationships between women's work, the size of dowry and other resource flows from a woman's family to her husband's, and excess female mortality in rural north India.

The Ethnographic Context

Our research was carried out in Bijnor District, Uttar Pradesh, which lies about 160 kms north-east of Delhi, has an area of 200,000 sq kms, and a 1981 population of nearly 2 million. The two villages we studied are called Dharmnagri, entirely populated by caste Hindus and Harijans, with a population of 700; and Jhakri, with a population of 350, entirely Muslim. Over 40% of the population is under 15, and the two villages grew by about one-third from 1975 to 1985. The sex ratio of the two villages is about 1175 males per 1000 females; there is little seasonal or long-term migration of men. The study villages are about 5 kms from the market town of Bijnor itself, close to the river Ganges and some 50 kms south of Hardwar.

In the past 25 years or so, Green Revolution-type changes have taken place, but not as dramatically as in Punjab and Haryana, or further west in U.P.

3 For an early discussion, see A. Oakley, 1974.

New varieties of seed are widely used. Tractors are a common sight, although most ploughing and field preparation is still done by bullock- and buffalo-power. These changes have been made possible by assured water supplies. Under British rule, very little land in Bijnor was irrigated, despite the proximity of the Ganges: all the canals were built to the west. Since 1960, private electric and diesel tubewells have revolutionised the picture. The major staple crops have changed dramatically in the last 80 years; of the rabi crops, barley and gram have almost disappeared before the advance of wheat, largely High-Yielding Varieties (Figure 1); of the kharif crops, rice and especially sugar-cane (the major cash-crop) have supplanted *bajra* and pulses (Figure 2).

At the same time as cropping patterns have changed, the cropped acreage has increased, accomplished partly by a rise in double cropping. Rice and wheat can be taken from the same land, because tubewells provide a secure water supply and new seeds mature faster. But part of this increase in grain production has also been attained by pushing back the margin of cultivable land (Figure 3): between 1905 and 1979, irrigated land increased to 40%, and culturable (but uncultivated) land declined. Some swamps have been drained and protected from the Ganges flooding. Much uncultivated scrub-land has been cleared and used for crop production.

These data are somewhat suspect: cropping returns are provided by lowpaid village-level workers and the sugar-cane acreage is likely to be exaggerated, because it effects entitlements to sales to Government sugarmills at a secure price, and access to some sources of credit. But the picture is consistent with, if more extreme than, one provided by other sources.⁴

Dung-work

Cattle-dung, known locally as *gobar*, plays a central part in everyday life - not something which we could sidestep, either literally or metaphorically. In the two study villages, well over 80% of households own cattle, with the average being 3 animals. For all its ubiquity, cattle-dung is largely privately owned. Dung which collects in an animal's stall belongs to the owner of the animal; if an animal defaecates en route to the fields, or while pulling a cart along a village track or road, someone from the household will usually try to collect it. Only if cattle-dung lies unclaimed in public space can anyone gather it up, so those

4 See, for example, T. J. Byres and B. Crow, 1985.

Figure 1

Cropping Patterns in Bijnor Tahsil

Rabi (winter crops)

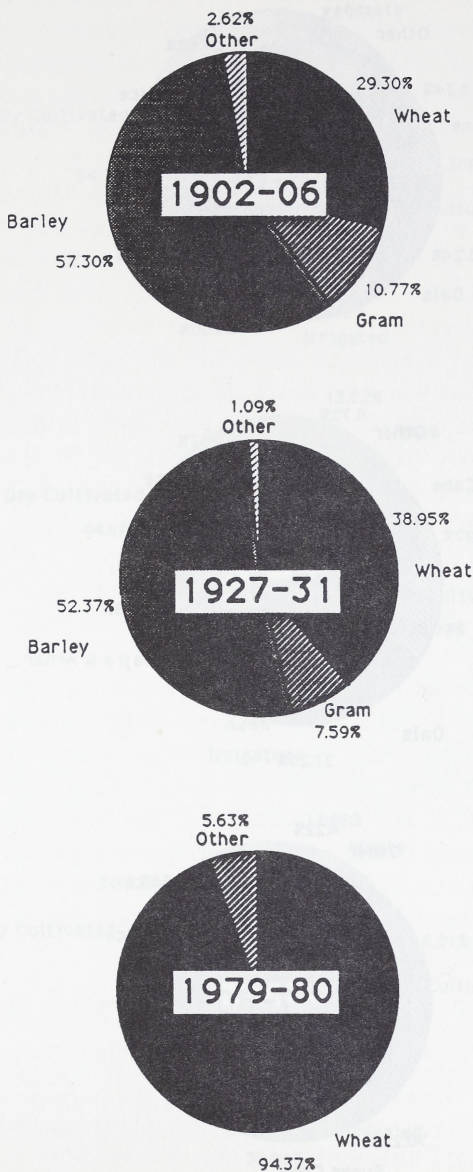


Figure 2

Cropping Patterns in Bijnor Tahsil

Kharif (Summer crops)

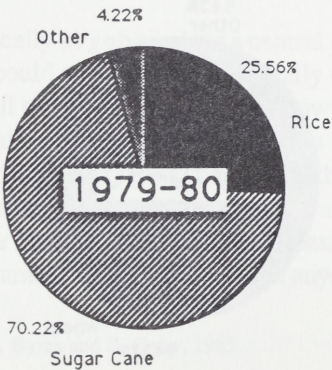
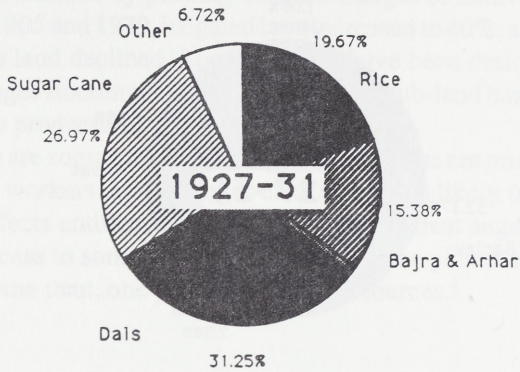
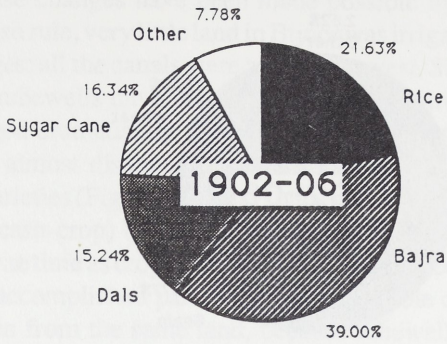
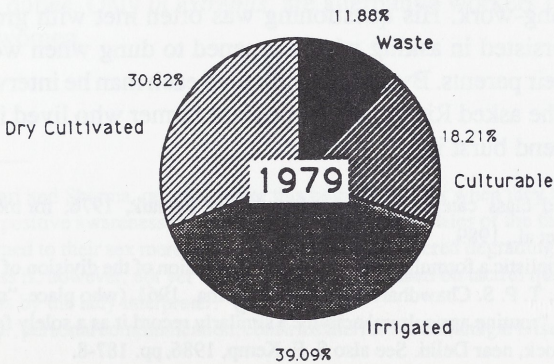
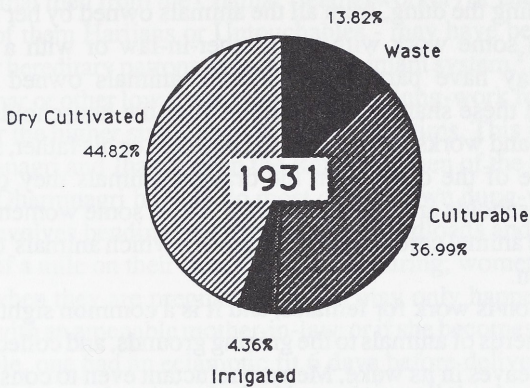
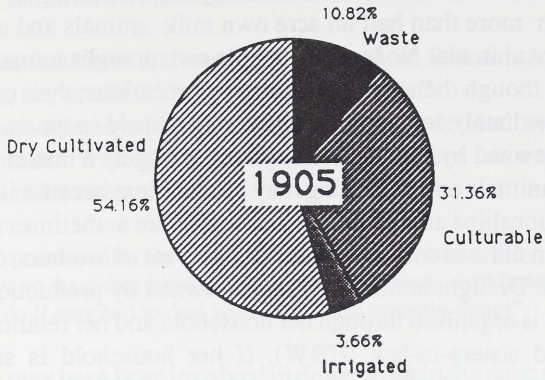


Figure 3

Land Use in Bijnor Tahsil



without their own animals have only unreliable access to it.

Cattle ownership is not totally determined by the ownership of land.⁵ Most landowners with more than half an acre own milk animals and own or have a share in draught animals. No landless people own draught animals, but some own milk cattle, though their ownership may be precarious; their cattle that die may not be immediately replaced, or cattle may be sold in an emergency.

All cattle are owned by men, but cattle-dung is largely a matter for women. Their access to animals and their dung may be complex, because it depends on production relationships among men. Households are sometimes members of larger production units of a man and his sons, or a set of brothers, or (rarely) of paternal cousins. Draught animals tend to be owned by production units, but a woman's work is organised through her household and her relationships with her mother- and sisters-in-law (HBW). If her household is separate, for consumption purposes, she does all the animal care and is entitled to all their products, including the dung, from all the animals owned by her husband. But if she still does some work with her mother-in-law or with a sister-in-law (HBW), she may have part shares in milk animals owned by the joint households, and these shares may continue after the households have separated. If her husband works jointly with his brothers or his father, she may have rights to a share of the dung from the draught animals they own together, whether the households are joint or separate. Thus, some women are involved in quite intricate animal care rotas, which govern which animals' dung they can collect and when.

Dung collection is work for females, and it is a common sight to see young girls following herds of animals to the grazing grounds, and collecting the dung which the herd leaves in its wake. Men are reluctant even to consider handling it.⁶ During interviews about the work cycle Andrew asked men whether they ever did any dung-work. His questioning was often met with great hilarity. However, he persisted in asking what happened to dung when women were away visiting their parents. Bystanders ridiculed each man he interviewed. For example, when he asked Riasat, a poor peasant farmer who lived in a nuclear household, a friend burst in:

5 We have used class categories loosely based on U. Patnaik, 1976; for more details see P. M. Jeffery et al., 1989.

6 This is too simplistic a formulation; but an early discussion of the division of labour by sex in agriculture, T. P. S. Chawdhari and B. M. Sharma, 1961, (who place "manuring and manures" as a "routine agricultural activity") similarly record it as a solely female activity in Nangloi Block, near Delhi. See also S. F. Kemp, 1986, pp. 187-8.

"He collects it himself in a basket. He scoops it up with his hands, and then pops the basket on his head. Then the shit runs through the weave in the basket and down over his face!"

and he slapped his knees and roared with laughter. Riasat hastily denied this account: "No, no, brother! Dung is woman's work."

The work associated with this resource, then, is derided by men, and relegated to woman.⁷ Women are hardly enthusiastic but have to comply with men's refusal to be contaminated:

"You know, our men can't even wipe a child's snotty nose. Why, if a child urinates on them they hand it over to us straight away. Just imagine what they'd do if they had to deal with baby's shit or cattle-dung!"

Some men may have been involved in dung-work in the past: some commentaries suggest that men from the Chamar (leatherworker) or Bhangi (sweeper) castes - both of them Harijans or Untouchables - may have been involved in dung-work for hereditary patrons as part of the *jajmani* system.⁸ More evidence exists of Chamar or other low-caste women doing dung-work for women from clean castes or the higher status groups among Muslims. This is now uncommon in Dharmnagri and Jhakri: even the Rajput women of the richest peasant household in Dharmnagri have to do most of their own dung-work.

The work involves bending and lifting heavy headloads and carrying them up to quarter of a mile on their heads, and is very tiring; women are very keen to give it up when they are pregnant. But this may only happen if she is still living jointly with an amenable mother-in-law, or if she becomes very seriously ill. For example, one had an eclamptic fit 6 days before delivery and became unconscious, but up to that time she had been doing all the dung-work as well as her other duties. Only *in extremis* are alternative workers found, and they are always women.

7 Chawdhari and Sharma, *op. cit.*, make this point delicately when they note that they "discovered positive awareness on the part of the younger females of the fact that certain jobs are assigned to their sex merely because these are considered degrading for male folk. The awareness is, however, not yet vocal; it was only revealed on tactful questioning of the respondents by the lady interpreter." (p. 646)

8 M. Tomar, personal communication, confirms this for Muzaffanagar District, west of Bijnor.

Cattle-dung has three main uses: as plaster and as building material; as fuel, and as fertiliser.

Dung for Building and as Plaster

The courtyards, grain stores and the walls of adobe houses are made with mixtures of mud, dung and chopped straw. They all require a coating to render them and help them to resist the damp and the effects of rain, and dried dung is diluted to form a thin paste, and spread by hand. House walls may be plastered a few times a season; granaries when they are repaired every year or so; but courtyards are more frequently coated as a part of weekly cleaning, or in order to show a special preparation at the time of religious rituals. Only women do this work: it probably uses relatively little dung.

Dung as Cooking Fuel

In this part of India, before it is used as fuel, dung is formed into "cakes" (*upla*), then dried in the sun and stored. Women have separate pitches on areas of flat land on the outskirts of the two villages, and squatting on their haunches, they combine the dung with straw and water, form it into thick dinner-plate sized cakes and set them out in rows in the sun to dry. These dung-cakes have to be turned several times before they are ready to be stored in a stack (*bitaura*), which line the roads or paths all over north India. Variations in style are apparent from any bus journey of more than 50 miles or so.

When the stack is complete it is sealed with a coating of dung, thatched and topped out with an inverted pot that keeps out the rain and prevents the dung-cakes turning into sludge. Women unpack dung-cakes from the stacks as they need them and take them home to use as their main cooking fuel. We did not discuss with women their views of the benefits or costs of different kinds of cooking fuels, though others have reported on the difficulties of persuading the Indian "house-wife" (sic) to give up using dung-cakes, for they believe that dung-smoke improves the flavour of food and dung-cakes burn slowly and allow food to simmer well - a point which designers of "improved", or "smokeless" stoves seem to have had difficulty in understanding.⁹

9 Royal Commission on Agriculture in India, 1928; B. Agarwal, 1986a.

Making dung-cakes can occupy two hours of a woman's time every day, depending on how many animals she owns and the amount of cooking fuel required.¹⁰ Patricia frequently found women most available for private conversations while they were making dung-cakes: these patches of land are female space, and women usually work somewhat apart from one another, so she spent a fair part of the winter months squatting on a couple of (dry) dung-cakes talking to women while they worked.

However, women make dung-cakes only for 7 to 8 months of the year, from about October to May. Dung-cakes are not made in the hot pre-monsoon period, because grubs destroy them, nor during the monsoon itself, when they cannot be dried.

Dung for Midden Fertiliser

During the hot and rainy months of May to September, then, women and girls collect dung and tip it - along with other household waste - into the midden. Some women also reduce their burden by tipping dung into the midden in the "wrong" season because they find making dung-cakes too heavy, for example during pregnancy or when they are ill. All the year round, the midden receives the sweepings from the courtyard and other sources of household rubbish, possibly (among Muslims and some Hindus) including the placenta of any babies born, and the excreta of small children and other domestic animals like chickens.

The rubbish is left to mulch for some ten months. Only after this do the men have anything to do with dung, but by then it is no longer regarded as "dung" but "midden fertiliser" (*kuri ka khad*). Midden fertiliser is a valuable agricultural input, which the men shovel out of the midden pits onto carts, and plough into the fields before sugar-cane is planted in March-April. Midden fertiliser is universally regarded (perhaps wrongly) as an essential input into a successful crop of sugar cane.

10 These estimates are poor: women refused to answer repeat time-use questions, complaining of repetition and boredom, and our data cannot be analysed by season, class or household structure. Other reports suggest that 2 hours a day would be unusually high; T. P. S. Chawdhari and B. M. Sharma estimate 19 days-equivalent per year; D. Jain, 1985, reports only 10-20 minutes per woman aged 6-44 for her Rajasthan sample, and gives no separate figure for her West Bengal sample; M. Mitra, 1987, found poor peasant women spent only 15 minutes per day on dung-work, and reports no figures for other social classes.

The Value of Dung

Dung, dung-cakes and midden fertiliser are not usually sold. They are primarily produced for use. Placing a monetary value on them was difficult, and our informants were resistant to doing so.¹¹ However, isolated instances of sales provide a way of making a rough estimate of their worth. Dung-cakes have a market in Bijnor town, and sell for about Rs 8 for 100, and a woman with the day's dung of five or six animals might be able to make 50-60 dung-cakes a day, providing a potential income of about Rs 1000 per year, perhaps equivalent to 5 or 6 months wages as female agricultural labourer.

Midden fertiliser is sold even more rarely than dung-cakes. Farmers strongly resist selling it if they can avoid it, preferring to use it on their own fields. In 1982/83 we learnt of only one cart-load of about 750 kgs of compost sold for Rs 50. An average midden for a middle peasant household might produce between 40 and 50 such cart-loads each year, and a cash value of maybe Rs 2000 to Rs 2500, or about 7 months wages for a male labourer.

Thus women's dung-work can be given a considerable cash value, either in terms of income or the opportunity cost of using dung in these ways. However, most women are not paid for their dung-work, since it is almost entirely done by family labour, nor do they obtain any informal credit for the contribution this makes. Occasionally a woman will sell dung-cakes, and she may be able to keep control of the cash or other income she receives for this, but it represents an inadequate recompense for her hard labour.

The Theoretical Analysis of Dung-Work

How, then, should we locate dung-work theoretically, in relationship to debates on "production" and "reproduction"? Recent feminist discussions of this division, and the related distinction between "public" and "private" spheres of social life, have stressed the dangers of applying them rigidly.¹² Women's position does not depend solely on their reproductive work within the domestic or private sphere; their work - whether private, reproductive, or in the public, productive spheres - makes important contributions to production. To maintain

11 S. F. Kemp, 1986, p. 195, notes that of 79 households in her study who used cow-dung as fuel, 11 bought it and 7 were given it as part of some other exchanges.

12 V. Beechey, 1979; I. Young, 1980.

such dualities raises problems, because dung-work (like many other aspects of women's work) straddles the division. We prefer to look at the situation in a more integrated fashion, as one where it is seen as "production-and-reproduction".

Specifically, dung-work is both "productive" - a part of agricultural activity, and what is more, specifically related to the major cash crop - and reproductive work - to do with cooking and consumption, the reproduction of the household from day to day - depending on the season. It is production for use which has an exchange value, even if it is rarely realised; it is work done in "private space" - within the domestic courtyard and at the all-female dung-cake areas - with considerable relevance for the public spaces of the fields where subsistence and, especially, cash crops are grown.

Development and Ecology

This brings us to the second main point of our paper. The invisibility of much of women's work reflects the seriously deficient ways in which "development" is generally conceptualised. This is a point often made by feminist critics of development writing, and one we would endorse.¹³ In the case of dung-work, there are some important ecological implications of ignoring it that take us beyond narrowly "feminist" points. However, most of these writings - even those which focus on the close connections between women's work and ecological degradation - focus on fuel consumption, and cattle-dung or animal wastes more generally receive only passing mention, despite some estimates showing that in India, 30% of rural energy consumption was provided by animal wastes; a figure for Pakistan was 80%.¹⁴ Arnold's estimate that 400 million tonnes of cattle-dung are burned annually in Asia and Africa, leading to the loss of 20 million tonnes of potential grain output, is often quoted.¹⁵ Thus cattle-dung is portrayed as something which is only used as cooking fuel because of a shortage of other (presumably superior) fuels. Having lamented its misuse in this way, attention is turned to accounting for the rise in its use and why alternative sources of fuel are no longer available, rather than in looking

13 B. Rogers, 1980; L. Beneria (ed.), 1982.

14 For three recent examples, see E. Cecelski, 1985; B. Agarwal, 1986a; and I. Dankelman and J. Davidson, 1988.

15 E.g. by E. Eckholm, 1979.

at the meanings and uses of cattle-dung in more detail. Similarly, focus is placed on ecological balances where forests are being cut down, as in Nepal or in Madhya Pradesh, rather than in looking at the situation where change is less dramatic, as in the Gangetic Plain.

Looking at dung-work highlights some ecological changes. Women's work, like men's, is not timeless, and several changes have taken place recently, possibly more rapid than at any previous time. There has been a rapid growth in the output of food grains and cash crops - precisely the indices generally used in Government circles as a sign of development. But, as has often been pointed out, these changes have had other effects (not necessarily positive) that affect women in particular.¹⁶ Looking at these changes through their effects on the role of dung helps to illuminate some of these changes.

For example, older residents of the two villages can remember when most cooking was done with wood gathered from the scrub-land, but now most of that land is under sugar-cane. Although the techniques for making dung-cakes seem to have been known locally for a long time, only within living memory have women started to cook predominantly with dung-cakes. A landless Brahman man described the shift in his lifetime as follows. Previously there used to be far more animals, which grazed in the marsh and on low-lying fallow ground near the river; only young animals, and those needed that day for work would be stall-fed. When he was young, cattle-dung was hardly used for dung-cakes: if he had said to a woman that she should cook with *upla* her reply would have been "take it away, I can't cook with that!" This is obviously an exaggeration: what it does seem to suggest, however, is an increase in the use of *upla* and a spread of its production and use to women in higher status groups.

Thus the "jungle", which is usually classified as "non-productive" land, had a variety of economic uses, including not only acting as a source of wood-fuel but also as a source of dung for those without animals. At today's prices, it would have provided hundreds of thousands of rupees worth of cooking fuel every year for local residents, quite apart from its use as a source of, for example, beams for roof-timbers and reeds for thatching huts. But foodgrains have been granted such a dominant sway over indicators of agricultural growth in India that the loss of jungle land goes almost unnoticed. Similarly, the work of women tends to be closely linked to the availability of such land, and as with other aspects of women's work, it is not covered by most official enquiries into land and labour use in India. The time frames are too short and the definition

16 B. Agarwal, 1986b.

of work too narrow to include much of what women do, whether in fodder, fuel and water collection or the processing of crops.

Furthermore, the transformation of jungle into agricultural land has accelerated several linked processes that have reduced soil fertility and forced farmers into more intensive commercial relationships. As the jungle has declined, so has the amount of common grazing land. A rise in double-cropping, and the value of cash crops, has reduced the amount of land under fodder crops (which are also often nitrogen-fixing plants). As far as we can gauge, this is associated with a decline in the number of animals supported in the villages. A smaller absolute amount of dung is produced; proportionately more of it must be used for fuel because of the decline in sources of wood.¹⁷ Consequently, farmers are forced to rely more on artificial fertilisers, and are drawn more closely into cash relationships over which they have no control.

Furthermore, some men's and some women's work at some seasons has been intensified. Animals are stall-fed rather than grazed, raising the need for fodder collection and fodder chopping. This may be done by men or women, depending on the available labour, season, and whether the chopping is mechanised. Water must also be fetched, usually by women. Women also have more work processing dung, since they have become more dependent on dung-cakes for cooking fuel and other fuels for kindling (twigs, reeds, dried grasses etc.) have to be fetched from farther afield, by men or women. In other words, the long-standing advice to the Indian Government to preserve land for grazing and fuel has had no impact on commercialisation processes in this part of India. But merely to bemoan this, declaring for example that "the use of cow dung as a source of non-commercial fuel is virtually a crime", does not get us very far.¹⁸

All the efforts of Government and industry in expanding credit, fertiliser, seed and water supply, have undoubtedly commercialised important aspects of agriculture and increased the output of grain and cash crops, while equally

17 Official statistics suggest that in U.P. as a whole, the number of cattle has hardly changed since 1966, whereas the number of buffalo has risen by 30% in the same period. We have no information on the balance between the two in Dharmnagri and Jhakri, nor on the consequences in terms of dung-work on any such change.

18 E.g. Royal Commission on Agriculture, 1928. The quote is from Government of India, 1973, p. 73, cited by E. Eckholm, 1975, p. 10. E. Cecelski also cites M. E. Khan and S. K. Ghosh Dastidar, 1983, to the effect that in parts of Punjab, rights of dung-collection are now "sold" to agricultural labourers in exchange for an extra hour's work; and R. Wade, 1987, describes the auctioning of dung-collection rights in Andhra Pradesh - but he does not describe who actually does the work. We did not find such a degree of commercialisation in Bijnor.

important areas of economic activity in which women's roles are more significant have been ignored.

Women's Work, Dowry and Female Survival

Does the foregoing shed any light on the position of women in rural north India more generally? There is much evidence of women's poor, and relatively deteriorating life-chances. For example, the sex ratio - men per 1000 females - is high and has been rising over most of the 20th century, with perhaps a downturn between 1971 and 1981. In rural Bijnor the sex ratio in 1981 was 1169 - not the worst in India but nearly so, whereas the sex ratio at birth is probably not much more than 1050. Since girls are thought to be "naturally" more robust, such an adverse sex ratio is probably a result of higher female mortality rates through the neglect of infants girls and, to a lesser extent, of women in the childbearing ages. The reported death rates in 1982 for rural Uttar Pradesh for children aged 0-4 are 68 per 1000 for females and 54 for males.¹⁹ At all ages up to 40, female mortality rates were above male rates.

These findings have been the cause of much recent discussion, most prominently stimulated by Barbara Miller's book, *The Endangered Sex*, but also the subject of a number of excellent articles.²⁰ Essentially, these authors conclude that the structural consequences of the north Indian kinship system leave women powerless and perceived as economic costs rather than benefits, and lead to strong son preferences and systematic (if subconscious) neglect of daughters. Furthermore, this situation is said to be getting worse. In some lower-caste groups, bride-wealth was the predominant marriage payment: some of these groups seem to have changed to a dowry system, like their upper-caste and property-owning neighbours. Furthermore, among those higher-status groups, the nature of dowry seems to have changed: as well as being seen as a heavier burden, it seems to be increasingly "demand-led" whereas people used to "accept what is offered".²¹

Consequently there seems to have been a rise in dowry deaths and harassment of young brides. Some have argued that this change is caused by women from poorer groups not only finding jobs harder to get, as a result of the Green

19 Government of India, 1985.

20 B. D. Miller, 1981; T. Dyson and M. Moore, 1983; M. Das Gupta, 1987.

21 R. Ahmad, 1987; M. Srinivas, 1986.

Revolution, but, in addition, being withdrawn from the labour force by their husbands, fathers or fathers-in-law as soon as they can afford to do so.²² In other words, it is argued, there is a relationship between a woman's economic contribution to the household and her "value" as a child. (Miller, 1980, p. 127)²³

Here we will comment on only two parts of this debate. Are women valued less as their economic contributions decline? Does this generate more demand for dowry to compensate parents of men to accept a parasite?

Dung-work is one form of women's work that has changed in its nature in the memories of old women: to recapitulate, they are probably spending more of their time doing it, dung's contribution as cooking fuel is probably more significant than it was before, and its role as fertiliser of the major cash-crop is still crucial; and women from a wider range of social classes are doing the work. What are the consequences of these changes to the evaluation of men and women and their work? In terms developed recently by Amartya Sen (1987), does this work increase the family entitlement; and within such an increased entitlement, does a woman's relative share improve? Although Sen's discussion is weakened by an uncritical distinction between "inside" and "outside" work, he points to the significance of three potential processes (p. 37). Does a woman's ability to do such work give her a better "breakdown" position, if her husband were to throw her out or the co-operative aspects of the household were otherwise to break down? Does such work give a woman a clearer perception of her individuality and well-being? Is such work perceived as making a higher contribution to the family's economic position?

Very simply, our data suggest that the answers to all three questions would be negative. In the absence of a well-developed market for dung products, or a labour market for dung-work, women must normally rely on a man for access to the raw material. We know of no cases where a man owning cattle was unable to get family female labour to do dung-work (and other aspects of "women's work", such as cooking), or to be unable to pay for someone else to assist the women of his household. By contrast, no woman without access to animals could make a living based on dung-work alone, or in combination with other work. Most dung-work done for others was paid in kind, and produced enough dung-cakes for the domestic use of the woman involved, but not for sale on to others. Because the work is derided, and women share in its negative evaluation, it is seen as drudgery requiring strength but no skills; women may take

22 U. Sharma, 1980.

23 B. D. Miller, 1981; P. Bardhan, 1982; S. Randeria and L. Visaria, 1984.

pride in their successful construction of *bitaura* (stacks) but it provides no noticeable element of positive self-image for women. Finally, the work is not seen to be central to the household's economic position. The example of dung-work illuminates how it is possible for what seems clearly to us to be hard manual labour, with considerable financial significance, to give women no perceptible additional claims to entitlements.

Significantly, perhaps, our informants themselves go further and make no links between changes in women's work and dowry levels. As one Muslim man said:

Ahmad: Women's work hasn't changed at all - they do just the same work as before. Dowry's gone up because this is an era of money. We used to make lots of our own things but now we get them from the bazaar. By example wedding costs have risen.

Andrew: Is that because girls are worth less now than they were before?

Ahmad: No - girls were never worth very much!

Thus they explain rising dowry expenses with reference to the commercialisation introduced by the Green Revolution. (They also blame the new chemical fertilisers for making men "hotter" and more ready to make demands.) They say that the level of competition for "good" grooms has risen; and that people always wanted to do the best they could for their daughters, in order to make their lives with their in-laws as comfortable as possible. Because many parents can now give more, they try to do so, and levels of expectation have risen in response to this. Of course, we do not have to accept our informant's explanations. However, we would point to one further flaw in the arguments of Miller and others. Among the Muslims in our sample, whose dowry costs are lower than those of comparable Hindus, levels of excess female mortality are higher than among those same Hindus. This is counter-intuitive; but the paradox cannot be explained by differences in the work done by young married women in the two communities, for these are much the same. In other words, we would suggest that what is crucial is not the work that is done by women but its evaluation, and women's access to property and the fruits of their work; these have shown no signs of change. Certainly, attempting to improve the position of women by increasing their work-loads, without attacking their lack of rights to property and income, will leave women worse off than they are at present.

Conclusion

This has been a limited exercise. We have not considered a number of linked issues, such as the possibility that there are too many cattle in the area; the ritual and symbolic ways in which the importance of cattle and its dung are marked; the effect on women's health of cooking by dung-cakes rather than wood; the effectiveness of social forestry as a way of remedying the situation; or the viability of biogas as an alternative source of fuel and fertiliser. Nor have we looked at the implications of current and possible alternative patterns of cattle ownership and milk marketing for the class structure; nor how dung-cakes are marketed around the major Indian towns and the role of women in that; nor how the extent of commercialisation of dung and its products affects domestic relationships. Others have studied many of these things: what we would argue is that they have not taken the dung as seriously as it warrants; and we suggest that this failure is linked to the fact that as women's work it has wrongly been felt to be beneath the contempt of development specialists.

BIBLIOGRAPHY

- Agarwal, B., 1986a, *Cold Hearths and Barren Slopes: The Woodfuel Crisis in the Third World*, London: Zed Books.
- Agarwal, B., 1986b, "Women, Poverty and Agricultural Growth in India", *Journal of Peasant Studies*, vol. 13, pp. 165-220.
- Ahmad, R., 1987, "Changing Marriage Transactions and Rise of Demand System in Bangladesh", *Economic and Political Weekly*, vol. XXII, pp. WS-2 to WS-26.
- Bardhan, P., 1982, "Little Girls and Death in India", *Economic and Political Weekly*, vol. XVII, pp. 1448-50.
- Beechey, V., 1979, "On Patriarchy", *Feminist Review*, vol. 3, pp. 66-82.
- Beneria, L. (ed.), 1982, *Women and Development: The Sexual Division of Labor in Rural Societies*, New York: Praeger.
- Byres, T. J. & B. Crow, 1985, *The Green Revolution in India*, Milton Keynes: Open University Press.
- Cecelski, E., 1985, *The Rural Energy Crisis, Women's Work and Basic Needs: Perspectives and Approaches to Action*, Geneva: I. L. O.
- Chawdhari, T. P. S. & B. M. Sharma, 1961, "Female Labour of the Farm Family in Agriculture", *Agricultural Situation in India*, vol. 16, pp. 643-50.
- Dankelman, I. & J. Davidson, 1988, *Women and Environment in the Third World*, London: Earthscan.
- Das Gupta, M., 1987, "Selective Discrimination against Female Children in Rural Punjab, India", *Population and Development Review*, vol. 13, pp. 77-100.
- Dyson, T. & M. Moore, 1983, "On Kinship Structure, Female Autonomy and Demographic

- Behaviour in India", *Population and Development Review*, vol. 9, pp. 35-60.
- Eckholm, E., 1975, *The Other Energy Crisis: Firewood*, Washington D. C.: Worldwatch Institute.
- Eckholm, E., 1979, *Planting for the Future: Forestry for Human Needs*, Washington D. C.: Worldwatch Institute.
- Government of India, 1973, *Interim Report of the National Commission on Agriculture and Social Forestry*, New Delhi: Ministry of Agriculture.
- Government of India, 1985, *Sample Registration Scheme, 1982*, New Delhi: Office of the Registrar-General, India.
- Harris, M., 1966, "The Cultural Ecology of India's Sacred Cattle", *Current Anthropology*, vol. 7, pp. 51-59.
- Heston, A., 1971, "An Approach to the Sacred Cow of India", *Current Anthropology*, vol. 12, pp. 191-7.
- Jain, D., 1985, "The Household Trap: Report on a Field Survey of Female Activity Patterns", in D. Jain & N. Banerjee (eds.), *Tyranny of the Household*, New Delhi: Shakti, pp. 215-248.
- Jeffery, P. M., R. Jeffery & A. Lyon, 1989, *Labour Pains and Labour Power: Women and Childbearing in India*, London: Zed Books.
- Khan, M. E. & S. K. Ghosh Dastidar, 1983, "A Micro-level Study on Acceptance of Community Biogas in Punjab", draft report, Operations Research Group, New Delhi.
- Kemp, S. F., 1986, "Wives, Mothers and Bullocks: Models of Rural Indian Women", unpublished Ph.D. thesis, University of Minnesota.
- Kipling, J. L., 1891, *Beast and Man in India*, London: Macmillan.
- Miller, B. D., 1980, "Female Neglect and the Costs of Marriage in Rural India", *Contributions to Indian Sociology*, vol. 14, pp. 95-129.
- Miller, B. D., 1981, *The Endangered Sex: Neglect of Female Children in Rural North India*, Ithaca and London: Cornell University Press.
- Mitra, M., 1987, "Women's Work: Gains Analysis of Women's Labour in Dairy Production", in A. M. Singh and A. Kelles-Viitanen (eds.), *Invisible Hands: Women in Home-Based Production*, New Delhi: Sage, pp. 109-43.
- Oakley, A., 1974, *The Sociology of Housework*, London: Martin Robertson.
- Patnaik, U., 1976, "Class Differentiation within the Peasantry", *Economic and Political Weekly*, vol. XI, pp. A-82 to A-108.
- Randeria, S. & L. Visaria, 1984, "Sociology of Bride-Price and Dowry", *Economic and Political Weekly*, vol. XIX, no. 15, pp. 648-52.
- Rogers, B., 1980, *The Domestication of Women: Discrimination in Developing Societies*, London: Kogan Page.
- Royal Commission on Agriculture in India, 1928, *Report*, H. M. S. O., London.
- Sau, R., 1988, "The Green Revolution and Industrial Growth in India", *Economic and Political Weekly*, vol. XXIII, pp. 789-96.
- Sen, A., 1987, "Gender and Co-operative Conflicts", mimeographed.
- Sharma, U., 1980, *Women, Work and Property in North-West India*, London: Tavistock.
- Srinivas, M. N., 1986, *Dowry*, Delhi: Oxford University Press.

- Wade, R., 1987, *Village Republics: Economic Conditions for Collective Action in South India*, Cambridge: Cambridge University Press.
- Young, I., 1980, "Socialist Feminism and the Limits of Dual Systems Theory", *Socialist Review*, vol. 10, no. 2/3, pp. 169-88.