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Women's Work and Agricultural Technology

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WOMEN'S WORK AND AGRICULTURAL TECHNOLOGY

The theoretical framework of this paper takes into account the relationship between women's work in subsistence agriculture and the rural development strategies, both at the local and national levels.¹ In these strategies women are perceived as basically peripheral to agricultural and rural development programmes, and their multiple roles and work in the rural economy are generally ignored in the androcentric environment of planning and policy making.

The relationship between women's social position and economic development has recently achieved public attention, in part because of the rise of a new consciousness in the women's movement in the seventies. In spite of the fact that women's role outside the home seems to be accepted, there remains a general lack of effort to understand the way in which the inherent conflict between their traditionally family-oriented role and the modern participatory social role can be resolved in the course of socio-economic development. The current dialogue on development has revealed that the process of development as it has unfolded in most of the third world countries has failed to improve the social position of underprivileged sections in general and women in particular.² It has also resulted in a redefinition of development itself and a more realistic appraisal of the processes at work.

The Green Revolution (supported by research interest in agriculture in Western countries with its package of high yielding varieties (HYV) machinery, a balanced dose of fertilisers and pesticides and carefully controlled irrigation) was introduced in Northern India in the 1960s. The direct results of the Green Revolution in the region have been sharply increased concentration of land ownership, massive dispossession of small holders, proliferation of landless workers and rural unemployment.³ While there has been some mention in official documents of the slippage towards marginalization and pauperization in the development process, the dimensions of the Green Revolution inequality between women and men are still only partially beginning to be

understood either by development planners, administrators or academics.

The Green Revolution dynamics should also be placed within a wider context of development of capitalism in the third world agriculture which subordinates these countries in a peripheral relationship to the advanced capitalist countries. This in turn generated the process of underdevelopment wherein women suffer from a two-pronged attack: exclusion from new technology and economic exploitation whereby they are denied their rightful participatory role in development; and second, within the family and community where they continue to remain victims of a sex-gender system of domination and subordination.

The decennial census figures and other demographic studies reveal that the number of women per 1000 men has been falling continuously from the beginning of this century, with a slight improvement in 1981. There is also a corresponding decline in the employment details.

'Critical Issues on the Status of Women' states:

In the 40 years between 1911 and 1951 the gap between men and women in the population increase is by 27 per cent. During the same period, women's proportion in the total work force declined from 525 per 1000 males (1911) to 408 per 1000 males (1951). In the 20 years between 1951 and 1971 the gap between men and women in the population rose from 8.9 million to 19.9 million i.e. by 50 per cent. In the same period the number of women workers in agriculture declined from 31 to 25 million, while that of men increased by 34.3 million. In the non-agricultural sector, women workers declined from 9.3 to 6.2 million, while men increased from 32.8 to 48.4 million. The total number of men workers increased by 27 per cent while women suffered a decline of 12 per cent - reducing their ratio in the work force to 210 per 1000 men.⁴

According to the 1981 census the sex ratio imbalance made a marginal improvement; 935 women per 1000 men. North India, in particular the states of Haryana, Punjab and Uttar Pradesh, was

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noted for the highest excess of males in the population. The female work participation rate showed an increase of 366 women per 1000 men in the category of total workers.⁵ The 1981 census data for the total workers category include marginal workers. Marginal workers have been defined as those who have worked for some time during the preceding year but not for the major part (i.e. for less than the 183 days prescribed for main workers). It is important to note that women engaged in unpaid household duties have been considered as non-workers.

The sharpest fall in women's employment was during the Green Revolution decade i.e. 1961-1971 when the female labour force declined from 60 million to 34 million.⁶ A resurvey by the census in order to make the 1971 census comparable with the 1961 figures also reported a fall from 31.4 per cent in 1961 to 13.1 per cent in 1971 in the proportion of rural women workers.⁷ The working group on employment of women in November 1977 came to the conclusion that women formed the largest section of unemployed in both urban and rural areas.

The Green Revolution led to a very definite increase in the number of agricultural labourers but the records also show an increase in disparity between the sexes among them. Whereas in the year 1981 and 1961 the proportion of women among cultivators had been between 289 to 498 per 1000 men, the ratio fell sharply between 1961 and 1971 to a figure of 135 women to 1000 men. Similarly, upto 1961 the female proportion among agricultural labourers had been relatively stable, but between 1961 and 1971 it dropped from 819 women per 1000 men to 498 women to 1000 men. According to the Rural Labour Enquiry (1974-1975) the number of all rural labour households in India recorded an increase of about 39 per cent between 1965 and 1975 while agriculture labour households registered a rise of about 36 per cent during the same period. In the case of women the rise in their figure as agricultural labourers has been even sharper during 1961 to 1971: approximately 50 per cent.⁸ The Committee on the Status of Women in India found that a rising level

of employment in agriculture, particularly as agricultural labour, is an indication of "increasing poverty and reduction in the level of employment and not of improving rights and opportunities for economic participation".⁹ The average daily earnings of women agricultural labourers in Uttar Pradesh was recorded as Rs.1.10 in 1961-1965, though it went up to Rs.3.19 in 1974-75, according to the Rural Labour Enquiry, thus indicating a decline in real wages.¹⁰

Pauperization and Marginalisation of Women

Green Revolution has brought in its wake the all-India trend of pauperization and marginalization and the increased inequality between the sexes. On the one hand it denies women the employment opportunities otherwise available to them, and on the other hand stereotypes all those jobs which pay less and require less skill, forcing women to take up jobs which come to be regarded as purely female tasks. Punjab, the heartland of the Green Revolution has the lowest rate of women's participation in the labour force i.e. 1.18 per cent.¹¹ The new agrarian technology in terms of pumpsets, tractors, threshers, etc. has caused a reduction of labour force to about one fifth of that involved in the traditional farming.¹² Haryana has a 2.41 per cent over-all participation rate of women.¹³ The sharp fall in the demand for female labour is also noticed in other high productivity areas of Tamil Nadu and Andhra Pradesh. In Thanjavur District of Tamil Nadu the number of male agricultural workers increased from 583.3 thousands in 1961 to 699.8 thousands in 1971, while the number of female agricultural labourers came down to 175.6 thousands from 321.2 thousands.¹⁴ The removal of women from their means of production and from their productive functions by the introduction of new technologies in West Godavari district of Andhra Pradesh has been pointed out by Maria Mies.¹⁵

Increasing pauperization of the rural population is also evident from the fact that in Western Uttar Pradesh between the years 1961 and 1971 (a period of concentrated mechanization and

technological penetration in agriculture), there was an increase of 138.9 per cent in the number of agricultural labourers.¹⁶ In this trend of pauperization, women are exploited the most by labour-displacing technology for they are the foremost section to be ousted from economically productive activity. This is evident in the fact that in Uttar Pradesh the percentage of rural female workers declined from 59.20 in 1961 to 8.54 in 1971.¹⁷ This reflects the fact that the competing power of the poor in general and women in particular is brought to a minimum, making them easier to control.

Women's withdrawal from the work force, however, is not an indicator of growing prosperity wherein women of the more affluent classes do not have to work in the fields. The kind of economic development that has taken place in this area does not alter the fact that for the majority of the households, agriculture is mainly a subsistence activity, where most or all of the output is consumed by the family which produces it, either directly or indirectly by selling the produce to meet the minimum needs of the family and to repay consumption loans. Women generally share the heavy burden of the work in transplanting, weeding, threshing, harvesting, carrying the produce home and processing of food grains.¹⁸

The inequality between the sexes is even more evident in the wage-disparity between female and male wage earners. In India women are generally paid 40 to 60 per cent of the male wages and are given the more labour intensive tasks like weeding, transplanting and harvesting. It may be pointed out that in Hamirpur Ruru and the other villages of our study in Etawah District, women in agriculture generally get one-third less than men agricultural workers. An all-India disparity between the daily earnings of men and women belonging to labour households in agricultural occupations has increased by approximately 50 per cent between 1964-1965 and 1974-1975. Although the wages in absolute amount are high in Uttar Pradesh, Haryana and Punjab, yet it is important to note that the rate of disparity between the wages of women and men nearly doubled

in Uttar Pradesh and trebled in the case of Punjab and Haryana between 1965 and 1975.¹⁹

It was evident in Hamirpur Ruru that women (and children) carry out the back-breaking task of transplanting paddy, while men concentrate mostly on the job of picking seedlings, which is considered skilful and demanding application of physical strength. Men receive more wages and their jobs are graded higher. Women toil as they do on the farm, along with their responsibility of cooking for the family and attending the children. Women's jobs are absolutely essential to the existence of the family and yet tend to be very tedious and time consuming and do not provide them with much autonomy concerning decisions in the home or even with regard to the disposition of their earnings.

It must be noted that the grading of these tasks is neither based on volumes in terms of the tedium nor on the number of hours on their performance, nor valued in productive terms. The logic of superior and better paid work for men derives from the fact that they are assumed to be household heads and thus ultimately responsible for the family. Women's work is ignored as unpaid household work and their contribution to production is regarded as secondary, or supplementary to men's contribution. Therefore, more money is spent on a male child in terms of food, clothes, and schooling, as he is seen as a potential earner for his natal family. This breeds in the males superior attitudes as they come to regard themselves as "the representatives of a new enlightenment". Women tend to accept being treated as inferior, both at home and in the labour market.²⁰ This social reproduction of values which devalues women's work, gets perpetuated and women get socialised into accepting their dependency on men.

The neglect of women's work in reproduction and care of the labour force means that their contribution to production is consistently undervalued. Savings on the non-wage labour in domestic production and the unpaid labour of family helpers accelerates the

accumulation of capital for investment in development which aims at increasing production for an external market and not satisfaction of needs in a local economy.²¹ This has led to erosion of the traditional ways in which agricultural and non-agricultural economic activities were organised. Traditional crafts, in the face of competition from urban industry, have been unable to survive. Earlier, women of the artisan castes had specialised roles to play in contributing equally towards the production of items of the village industry. Likewise, in traditional organisation of agricultural activity, women participated in every activity except ploughing. Women of artisan and peasant families played important roles in decision-making. With the cultivation of cash crops for the market, women have no decision-making power regarding the requirement of grain at home, thereby losing their authority at home.

In this process, women lose their subsistence base, forcing them and their children to depend on the wages of their husbands, perpetuating in this way the dependency relations of women on their men.

Underestimation of Women's Work

Women's participation in production tends to be grossly underestimated as a consequence of their non-involvement in decision-making and lack of training in the technological process in agriculture. This has led to a socially-determined classification of work which has had an adverse effect on the nature of women's activities and their roles. The sectors of agriculture where technological innovations have come have tended to be labour displacing and the first to be affected have been women.

In the traditional division of labour in the villages studied, women and men of the landowning caste Hindus and of rich Muslim households do not work in the fields. There is also a tendency of the smaller cultivators of various castes and communities to

emulate the former, which creates a contradiction between theory (ideal) and practice (actual way of life).²² At first, during the course of the interviews, both women and men tended to deny that the women worked in the fields, but gradually they admitted it. Women carry out a major part of agricultural activity, especially at the time of transplanting paddy, weeding, threshing, harvesting and processing of food grains. Moreover, in the given structure of development in the country, more male labour is made available as wage labour both in urban and rural areas, throwing almost the entire responsibility of agricultural work on women. However, women's work is perceived as non-specialized by both men and women and this contributed to the formulation of a part of the 'house worker ideology' that views women's productive work as an extension of household work.

Thus in the stratified society in India, it is the landowning class of caste Hindus who define the dominant values. In the traditional society, caste Hindus did not allow their women to work in the fields or do other manual work outside the house. That the majority of women cling to their household role that 'women are supposed to work inside the house' indicates two trends. First, women have internalized the oppressive norms of their domestication and seclusion and uphold the inequality of their sex roles, justifying it as natural and sanctioned by religion and social norms. The poor women are inclined to share the prestige values of class and caste groups who do not allow their women to work outside the house. Therefore, the contradiction between theory (women's acceptability of the household role) and practice (the diverse activities of women in agriculture and outside the sphere of the household) should be interpreted as class-related phenomena where only the life styles and social values of powerful castes matter. Second, there is a mystification caused in the process of the Green Revolution by the assumption that as women cannot work outside the house, so they cannot handle technology. In other words, the new agrarian technology

has used the feudal practices of domestication and seclusion of women for increasing capitalist relations of production in the countryside.

The greatest importance in various agricultural and non-agricultural activities is given to the core productive activity, over which women have no control. Ploughing and operating the potter's wheel, for instance, are taboo for women. Women are prohibited from touching the grip of the plough, which is regarded as representative of the phallic symbol signifying fertility and creation. Pollution of this symbol by the touch of a woman would portend the wrath of the gods resulting in natural calamities. It is only in periods of drought that women plough the fields, totally in the nude at midnight, calling (symbolically) to the right landowners to bless their fields with water. Control of men over this vital productive tool and over the critical activity of ploughing in agriculture is in this way perpetuated. We find this to hold true in the case of artisans also. For instance, among potters, the women manage the collection, watering and beating of clay, which is both strenuous and tiring. Women would not, however, touch the potter's wheel, as it represents the phallic symbol. One finds a similar pattern in the case of other artisan groups. In grain-roasting, the activity of putting corn and other grains for roasting in the Bhad (earthen multi-mouthed oven), and in carpentry the operation of the Aara (saw) are socially defined male jobs. The attempts at keeping women out of the core productive activity results in the greater control of men in the social, political and economic spheres and in a total disregard for women's work and their role in social production.

The second major activity for the preparation of land is irrigation. In earlier days, when fields had no direct access to water and water had to be collected in little ditches from where it would be thrown out via a bucket system (lehendi), women were very active in irrigating the fields. However, now the better-off landowners have acquired diesel pumpsets and manual labour is not required for this activity. Where the traditional system of irri-

gation still persists, women are active. Women, however, have no access to modern irrigation techniques. Most of the women, save those belonging to the landowning Brahmin and Thakur caste groups, help in weeding. This activity is not considered important by the men or the women and is given no more significance than house work. Weeding is mostly done in the afternoon after women finish most of their work for the day except cooking for the evening.

Participation of women in harvesting varies with the crop. It is intensive at the time of paddy harvest and less intensive at the time of wheat. However, women who work as wage labourers are equally active at the harvesting of wheat. Processing grain both for the family's consumption and for the market is a major activity which is carried out by women. They also use insecticides and pesticides to preserve grain and pack it in gunny/jute bags for the market. Women make large earthen containers (grain silos) reaching up to a height of ten feet, made damp proof by several layers of cloth and clay, for the storage and preservation of grain for home consumption. The task of cleaning, drying and storing of grain is performed entirely by women.

Like the core productive activities which are controlled by men, marketing too remains almost entirely the men's domain. In our study of the village Hamerpur Huru in Etawah, we interviewed women from 58 households. Out of the 58 households interviewed only in 11 families women participate in decision-making and exercise some kind of control in marketing. Most of the women in these 11 families negotiate with the grain dealers at home. With the exception of two women, the remaining nine women in this category are either widows or own land in their names or otherwise provide for the family. Some of the women sell grain to the local dealers without their husband's knowledge for they find it impossible to manage with the amount their husbands give them. These women also confessed that whenever their husbands find out about these grain transactions, they are beaten up. In almost all the cases, money is kept with the women, but they

have no control over it. The women wage-workers, however, have considerable power and authority in their homes.

Among the major household activities performed by women are grinding of flour (in the early hours of the morning with each woman grinding from 5 to 10 kgs. of flour daily), pounding of rice and processing of lentil, sweeping and cleaning of house and utensils, plastering of walls and floor with mud and dung, feeding and taking care of the children, milking and providing fodder and cleaning up of the cattle, processing of milk and its produce, provision of fuel, making cow dung cakes, cooking, carrying of meals to the fields.

The household is regarded entirely as women's area of work and however active a woman may be economically, she is expected to do all of it, all by herself and children. In two or three such cases, women are active selling cloth, teaching in a school and labouring in the fields, in addition to their entire burden of housework. They find their husbands unreasonable, demanding and not extending any help at all. Men with full adult status do not care for children, especially for infants.²³ Women care entirely for infants and children and when they receive help, it is from children or old people.

Implications for Social Division of Labour

This socially controlled sexual division of labour is a problem of social structure. Rural and agricultural development programmes have tended so far to ignore women's role in productive and reproductive activities. However, recently, a need has been felt for the inclusion of women in the agricultural extension programmes, but not a single programme of the extension scheme of agriculture for women has been conducted in the Mahila Extension Service Centre in Bakewar, in the district of Etawah. The only programmes that have regularly been conducted are limited to house-keeping and child care.

Analysing the cases of women in the three villages of Etawah District, it was found that leaving aside women wage labourers, the work of all those women who participate in agricultural activity on their own fields is not acknowledged as directly productive but merely an extension of their domestic work.

Since no direct cash incomes are seen to accrue from the **female** labour, women are denied both recognition and reward for their work. Asok Mitra candidly explains its implications that the family becomes the very root of patriarchy and the traditional division of labour becomes the manifestation of a class society.²⁴ This further explains that we should no longer look at the problem of sexual division of labour as related to the family but rather as a problem of development in the Third World.

Remarks: Imperative for the Future

Our study, as well as many other village studies have demonstrated that marginality and low wages are prevalent among rural women throughout the region of the Green Revolution in India. Most of the manual and non-technological work is done by women, while men operate the new agricultural machines and control the inputs as well as the produce. Women are not recognised for their productive role in the economy. Their reproductive role is considered a natural one and taken for granted. Both men and women are socialised in a manner which prescribes the public and economic spheres as the male sphere and regards the domestic as the non-productive, non-economic female sphere. The technological development has maintained and perpetuated this distinction through the process of social reproduction, i.e. reproduction of the conditions sustaining a social system. For the women in subsistence agriculture it implies the reproduction of exploitative relations of production, gender related differentiation in access to the new agrarian technology, the relationships of domination and subordination between the sexes and women's low position in the family and society.

The politics of agrarian technology often turns out to reinforce the androcentric development status quo, and the question remains, how do we check the process of underdevelopment of women? How do we analyse and respond to many conflicts between the potential value of technology and its actual effects on women in subsistence agriculture? The ideology of planning encourages an image of agricultural women in which the technological and scientific solutions of the problems of development are constantly generated by an expert group of planners and policy-makers but are not accepted by the 'backward' peasant women. It is assumed that the reasons of acceptability and non-acceptability of development programmes are to be found in the ignorance and conservatism of the rural women.

Indeed, the most realistic assumption on which to base planning for development is that all women pursue a livelihood and their decisions about the rural development programmes are rational and call for immediate action of building up a participatory development system wherein women and men fully participate in the decision-making process. The task of agrarian technology and the rural development programme is to integrate women within the mainstream of economic activity and not to segregate them into a mass, perpetually dependent on the benevolence of their male masters. There is urgent need to recognize women as the technology makers and as technology users, as they have always been, and to provide training opportunities and assistance that will enable them to handle and make use of modern technology. However, the strategy should not be to further the process of atomization, i.e. isolating these women from others through the very limited income-generating activities like breeding of silkworms, bidi-rolling, masala-grinding etc. within the household. The problem of rural women is to be seen as a problem of mobilizing women through their organized efforts to understand their present situation in order to solve the problems of the past and to acquire ability to participate in decision-making and thus halt unequal distribution of

FOOT NOTES

1. This paper is based on my study : The Impact of Green Revolution and Women's Work Participation and Sex Roles (Prepared for ILO, Geneva, 1981).
2. Boserup, Ester. Women's Role in Economic Development, New York St. Martin Press, 1970; Vina Mazumdar ed. Role of Women in Rural Development: Report of an International Seminar, New Delhi. Allied Publishers, 1978; Kelkar, Govind. Comparative Case Studies of Formal and Non-Formal Popular Participation in Development in Asian Countries, UNESCO, Paris, 1981.
3. Frankel, Francine R. India's Green Revolution: Economic Gains and Political Costs, New Jersey Princeton University Press, 1971; Dasgupta, B. The New Agrarian Technology and India, Macmillan, 1980.
4. Advisory Committee on Women's Studies, Critical Issues on the Status of Women, ICSSR, New Delhi, 1977.
5. Census of India, 1981 Series I, Primary Census Abstract.
6. Towards Equality, Report of the Committee on the Status of Women in India, Government of India, 1974, p.23
7. Mazumdar, V., Sharma K., and Acharya S., "Country Review and Analysis on the Role of Participation of Women in Agriculture and Rural Development in India", ICSSR, 1979, p. 23.
8. Ibid, p. 21.
9. Towards Equality, op. cit, p. 163.
10. Rural Labour Enquiry, Government of India, Ministry of Labour, 1974-1975, p. 106.
11. Based on the 1971 Census, Statewise Participation rates are given in Kumaresh Chakravarty and C.C. Tiwari, "Regional Variation in Women's Employment: A Case Study of Five Villages in Three Indian States", ICSSR, 1979.
12. Billings, M. and Singh Arjan, "Mechanization and the Wheat Revolution: Effect on Female Labour in Punjab: Economic and Political Weekly, Dec. 1970, pp. 169-192.
13. Chakravarty and Tiwari: "Regional Variation in Women's Employment". op. cit.
14. Ibid.
15. Mies "Capitalist Development and Subsistence Reproduction", Rural Women in India, Bulletin of Concerned Asian Scholars, Vol. 12, No. 1, 1980.

16. R. Nayyar, "Wages, Employment and Standard of Living of Agricultural Labourers in Uttar Pradesh" in Poverty and Landlessness in Rural Asia. ILO, Geneva, 1977, p. 78. The corresponding rise in agricultural labourers in eastern and central Uttar Pradesh was only 45% and 75% respectively. Population rise in Western, Eastern and Central Uttar Pradesh were 22.3%, 20.6% and 16.9%.
17. Towards Equality, op. cit., p. 156.
18. Ahmad, Iftikar, "Technological Change and the Conditions of Rural Women" Working Paper, ILO, Geneva, 1978) Ester Boserup and Christins Liljencrantz, Integration of Women in Development, Why, When, How? UNDP, 1975, Bhaduri, A.; Technological Change and Rural Women: A Conceptual Analysis, (Working Paper, ILO, Geneva, 1979).
19. Rural Labour Enquiry, op. cit., pp. 102-103.
20. Chinnery Hesse M. "Women and Decision Making"... "The Traditional Division of Work Between the Sexes", A Source of Inequality. International Institute of Labour Studies, Research Series, 21, Geneva, 1976.
21. Mies, Maria; The Lace Makers of Narsapur, Zed Press, 1982 also Loutfi Martha, Rural Women, Unequal Partners in Development, ILO, Geneva, 1980.
22. Mies, Maria in her Indian Women and Patriarchy, New Delhi, Concept, 1980 argues that in the case of Caste Hindus economic necessity forces women to work outside the house to secure family's subsistence which they consider as deviation. These women may deviate widely from the accepted social norms in practice but they never attack the norms directly.
23. N. Chodorow: "Mothering, Male Dominance and Capitalism", in Z. Eisenstein (ed.) Capitalist Patriarchy and the Case for Socialist Feminism. Monthly Review Press, 1979, p. 87, argues that "Women perform primary parenting functions, than, is a universal organisational feature of the family and the social organisation of gender".
24. Mitra, Asok, Pathak Lalit P. and Mukherjee Shekhar; The Status of Women, Shifts in Occupational Participation, 1961-1971, New Delhi, Abhinav Publications, 1980, p. 43.

The Centre for Women's Development Studies is a group of professionals striving to work for the realisation of women's equality and development in all spheres of social life. It visualises its main role as that of a catalyst, in assisting women to realise their full potential and exercise their active influence on society and its transformation. The goals of national policy which support fuller and equal participation of women in all aspects and spheres of national life and development can be promoted if the ideas and institutions that marginalise women's role and contribution in society are weakened or eliminated.

The main objective of the Centre, therefore, is to help in the promotion, development, and dissemination of knowledge regarding evolution of women's roles in society and trends in social and economic organisation which impinge on their lives and status, with a view to :

- i. enhancing women's effective participation in the development process;
- ii. assisting in the framing and implementation of measures for realising women's equality; and
- iii. changing social attitudes regarding women.