

## **1.1 : AGRICULTURE SECTOR IN INDIA**

Rural Indian women are extensively involved in agricultural activities. However the nature and extent of their involvement differs with the variations in agroproduction systems. The mode of female participation in agricultural production varies with the landowning status of farm households. Their roles range from managers to landless labourers. In over all farm production, women's average contribution is estimated at 55% to 66% of the total labour with percentages, much higher in certain regions. In the Indian Himalayas a pair of bullocks works 1064 hours, a man 1212 hours and a woman 3485 hours in a year on a once hectare farm, a figure that illustrates women's significant contribution to agricultural production. (Shiva FAO, 1991)

The impact of W.T.O rules and policies of trade liberalization in the agriculture sector on women is distinctive for four reasons. Firstly, women have been the primary seed keepers, processors. They have been the both experts and producers of food, from seed to the kitchen. W.T.O impacts women's expertise and productive functions throughout the food chain. The Trade Related Intellectual Property Rights (TRIPS) agreement impacts women's knowledge of and control over seed. The Agreement on Agriculture impacts women's livelihood and income security, and also has secondary impacts in terms of increased violence against women. The sanitary and phyto sanitary agreement has a direct impact on women's expertise and economic role in agroprocessing.

Secondly, as globalization shifts agriculture to capital intensive, chemical intensive systems, women bear disproportionate costs of both displacement and health hazards.

Thirdly, Women carry the heavier work burden in food production, and because of gender discrimination get lower returns for their work. When WTO destroys rural livelihoods, it is women who loose the most. When WTO rules allow dumping which leads to decline in prices of farm products, it is womens - already low incomes, which go down further.

Fourthly, their position vis-à-vis WTO is also more vulnerable because as the livelihoods and incomes of farmers in general, and women agriculturists in particular are eroded, they are displaced from productive roles, women in agriculture and their status is further devalued, while the patriarchal power of those who control assets and benefit from asset transfer due to globalisation is increased, other social processes are triggered which result in increased violence against women.

The violence associated with displacement, devaluation and dis-empowerment takes the form of intensive violence, increasing incidences of rape, the epidemic of female foeticide, and growth in

trafficking of women. Women also bear the ultimate burden of farm suicides, since they are left to look after their households without assets but with the burden of indebtedness.

India has a geographical area of 328.73 million hectares; of which reported area for land use is 306.04 million hectares. The net area cultivated is about 142.60 million hectares i.e. about 46.6 per cent of the total reported area. Since nearly 50 million hectares of area is sown more than once, the cropping intensity works out to 135.1. Forests account for about 68.97 million hectares i.e. 22.5 percent of the total reported land area. Also nearly 13.97 million hectares are cultivable wastelands and 9.91 million hectares are fallow lands. Only about 30 percent of the total cropped area is irrigated and the remaining area is rain fed. The available statistics further shows that only about 66 percent of the gross cropped area is under food crops and nearly 34 percent area under nonfood crops. Cereals and pulses account for nearly 52.93 per cent and 12.64 percent of the total area respectively. Fruits and vegetables occupy nearly 4.24 percent of area. (Haque 2003)

Plantation crops accounts for insignificant proportion of total area at the macro level, although these are very important crops for certain regions, namely tea in Assam and West Bengal, Coffee in Kerala and Karnataka, Coconut, cashew nut and rubber in Kerala and Tamil Nadu. Of the total coconut area of 1.84 million hectares, Kerala accounts for 51 percent followed by Tamil Nadu 17 percent, Karnataka 18 percent, Andhra Pradesh 5.4 percent and other 9.6 percent. In the case of cashew nut, there are about 601 thousand hectares of which Kerala accounts for 20 percent, Andhra Pradesh 15 percent, Karnataka, Maharashtra and Tamil Nadu 14 percent each, Orissa 11 percent and Goa 8 percent and others 4 percent. Tea covers nearly 4.34 lakh hectares of area in the country of which 3.33 lakh hectares are in the states of Assam and West Bengal. Coffee is predominantly grown in the three southern states of Karnataka, Kerala and Tamil Nadu. Of the total coffee area of about 2.41 lakh hectares, Karnataka shares 1.28 lakh hectares, Kerala 66.5 thousand hectares and Tamil Nadu 32.9 thousand hectares. Similarly rubber is the crop of southern states. Of the total rubber area of 5.59 lakh hectares, Kerala shares 4.73 lakh hectares, Karnataka 19.6 thousand hectares and Tamil Nadu 18.7 thousand hectares. Also the contribution of plantation crops to foreign exchange earnings is very significant. While tea and coffee earn sizeable foreign exchange, rubber is a valuable import substitute, for rubber-based industries.

According to population census of India 2001, there are about 402.5 million rural workers of which 127.6 million are cultivators and 107.5 million are agricultural labourers Table - 1.1. In other words, pure agricultural workers constitute nearly 58.4 per cent of the total rural workers, of which 31.7 percent are owner cultivators and 26.7 percent are mainly agricultural wage earners (Agriculture Statistics at a Glance, sourced from Registrar General of India, New Delhi 2001). The latest available agricultural census data (Govt. of India, Agricultural Census Division, Ministry of Agriculture 2002) also reveal that about 78 percent of operational holdings in the country are marginal and small, having less than 2 hectares. About 13 percent holdings have 2 to 4 hectares and 7.1 per cent have 4 to 10 hectares of land. (Haque 2003)

The relatively large holdings above 10 hectares number only about 1.6 percent of the total operational holdings. However, these 1.6 per cent of the large holdings occupy about 17.3 per cent of the total area, while 78 percent of holdings which are less than 2 hectares, operate only about 32.4 percent of the total area. This speaks of inequality in the distribution of operational holdings. Also there is inequality of income between agricultural and non-agricultural workers, which is evident from the fact that percentage share of agriculture in current total GDP is only 24.2, while the percentage share of agricultural work force to total work force comes to about 60 percent.

The agricultural Census data clearly bear out the fact that Indian agriculture is dominated by small and marginal farms, which are basically subsistence farmers. They provide mainly for self-consumption. However, some of these farmers have to sell their produce immediately after harvest at low prices and buy the same products later at high prices.

**Table -1.1 (1) : Population and Agricultural Workers (in millions)**

| Year | Rural Population | Cultivators     | Agricultural Labourers | Other Workers       | Total Rural      |
|------|------------------|-----------------|------------------------|---------------------|------------------|
| 1951 | 298.6<br>(82.7)  | 69.9<br>(49.9)  | 27.3<br>(19.5)         | 42.8<br>(30.6)      | 140<br>(100.0)   |
| 1961 | 360.3<br>(82.0)  | 99.6<br>(52.8)  | 31.5<br>(16.7)         | 56.6<br>(30.5)      | 188.7<br>(100.0) |
| 1981 | 523.9<br>(76.7)  | 92.5<br>(37.8)  | 55.5<br>(22.7)         | 96.6 (a)<br>(39.5)  | 244.6<br>(100.0) |
| 1991 | 628.7<br>(74.3)  | 110.7<br>(35.2) | 74.6<br>(23.8)         | 128.8 (a)<br>(41.0) | 314.1<br>(100.0) |
| 2001 | 741.7<br>(72.22) | 127.6<br>(31.7) | 107.5<br>(26.7)        | 167.4<br>(41.6)     | 402.5<br>(100.0) |

Source : Registrar General of India, New Delhi, 2001

### **Characteristics of labour Market in Agriculture**

According to 55th of National Sample Survey (NSSO, 2001), agricultural labour households constitute nearly 32.2 percent of the total rural households. The self-employed in agriculture account for 32.7 per cent of the total rural households. In fact, the proportion of agricultural labour households increased from 30.3 per cent in 1993-94 to 32.2 percent in 1999-2000. While that of cultivating (self-employed) households declined from 37.8 percent in 1993-94 to 32.7 per cent in 1999-2000. The proportion of female-headed households increased from 9.7 per cent in 1993-94 to 10.4 percent in 1999-2000. Nearly 62.6 per cent of the rural households belonged to less than Rs. 470 monthly per capita expenditure class. Nearly 4.6 percent rural households reported that none in the family was

having any work, 27.7 per cent reported that only one male member was, usually working, while 27.8 households indicated that one male and one female member were usually employed.

Of the female households 22.8 percent reported that none of their person was usually employed and 39.6 percent mentioned that only one female member was usually working. The NSSO data further revealed that 7.2 percent of the rural households did not possess any land and 51 percent households possessed less than 0.4 hectare. About 19.1 percent household possessed between 0.41 and 1 hectare and 11.5 percent between 1.01 and 2 hectare. Only 11.2 percent possessed land above 2 hectare. Thus by and large Indian farming is dominated by small and marginal farmers. In fact, the proportion of rural households not possessing any land or which possessed less than 0.4 hectare land was quite high in the states of Bihar, Goa, Maharashtra, Sikkim and Tamilnadu. Also the proportion of agriculture labour households was quite high in some of these states. It was 38 percent in Bihar, 41.7 percent in Maharashtra and Karnataka and 45.2 percent in Tamilnadu.

Another important source of data is Census of India (2001), according to which there are nearly 127 million cultivators, 107.5 million agricultural labourers and 6 million other farm workers engaged in livestock, forestry and plantations. Of the total agricultural labourers, 38.0 per cent were female and 61.9 percent male workers. Also among livestock, forestry and plantation workers, 78.3 percent were male workers and 21.7 percent were female workers. About 99.2 percent of agricultural workers were reported to be unorganized and unprotected.

### **Status of Plantation Workers**

The data compiled by Labour Bureau, Government of India from annual returns under the Plantation Labour Act, 1951 show that nearly 10.9 lakh persons were employed in the plantation sector, comprising 10.2 lakh in tea, 30680 in coffee, 27302 in rubber, 3463 in cardamom, 2696 in cinchona and the remaining in other plantations. At all India level, 50 percent workers in tea and coffee plantations, 34 percent workers in rubber, 62 percent workers in cardamom, 38 percent workers in palm oil and 45 percent in cinchona were women. In the plantation sector, nearly 80 percent are small holders having less than 20 acres each. Workers in smaller estates are by and large unorganized and their levels of employment are relatively lower than their counterparts in large plantation estates. It has been known that coffee and rubber planters in Kerala, and Karnataka that workers in small plantation estates receive Rs. 10 to Rs. 20 less per day as compared to those working in large estates. Also they do not adequately get the benefit of minimum wages, bonus and other facilities such as housing, medical care, maternity benefit etc.

### **Laws Governing labour Standards in Agriculture**

The Government of India has passed a number of laws in order to promote labour standards in agriculture. These laws are also in conformity with various relevant International Labour Organization (ILO) Conventions such as (i) Minimum Wage Fixing Machinery (Agriculture) Convention, 1969 (129), (ii) Equal Remuneration Convention, 1951 (No. 100), (iii) Discrimination (Employment and Occupation)

Convention, 1958 (No. 111), (iv) Forced Labour Convention, 1930 (No. 29), (v) Abolition of Forced Labour Convention, 1957 (105), (vi) Minimum Age Convention, 1973 (No. 138), (vii) Worst Form of Child Labour Convention, 1999 (No. 182), (viii) The Safety and Health in Agriculture Convention, 2001 (No. 184) and (ix) Plantation Convention, 1958 (No. 110).

### **The Plantation Labour Act, 1951 as Amended in 1981.**

This is an Act to provide for the welfare of labour, and to regulate the conditions of work, in plantations. According to this Act, in every plantation, effective arrangements shall be made by the employers to provide and maintain at convenient places in the plantation, a sufficient supply of wholesome drinking water to all workers, medical facilities, canteen, crèches, recreation facilities, educational facilities, housing facilities and annual leave with wages and maternity benefits. In most schools, there is a provision of free mid-day meal for the children of those employees drawing a monthly salary of Rs. 750. Every plantation, employing 50 or more women workers, also provides crèches.

However, only 20 to 25 percent of the plantation workers who are employed in large estates above 25 acres and who come under the purview of the Plantation Labour Act get such benefit. About 75 to 80 per cent holdings in tea, coffee and rubber are small and marginal where workers have access to free housing facility, free electricity and drinking water facilities and sometimes even medical care, they do not generally receive many of the benefits indicated above. Particularly women workers do not have access to maternity benefit in smaller estates based on personal interviews. Also the wage rates of these workers are less by Rs. 10 to 20 as compared to those working in larger estates where the workers are organized. Besides, they do not get subsidized rations unlike the organized plantation workers.

### **Poverty and Unemployment**

According to various rounds of National Sample Survey, the absolute number of rural poor persons increased from 232 million in 1987-88 to 244 million in 1993-94 and then declined to 193 million in 1999-2000. As shown by table 1.2 still about 27 percent rural people are reported to be below the poverty line. In several states including Bihar (44.3 percent), Orissa (48.0 percent) and North Eastern states, the incidence of rural poverty is higher than the national average (Economic Survey 2001-02). The NSS data (NSSO. 50th round) further reveal that: among landless agricultural labourers, the incidence of poverty is as high as 71.8 percent in Western Plan region of Assam, 83 percent in Jharkhand (former south Bihar), 78 percent in Northern Bihar, 71.9 percent in Central Bihar, 67 percent in Eastern Haryana, 64.2 percent in Chhattisgarh, 89.6 percent in South Western Madhya Pradesh, 72 to 76 percent in various regions of Maharashtra (other than coastal and inland Western Maharashtra), 61.9 percent to 83.9 percent in different regions of Orissa, 73.5 percent in Southern Rajasthan, 65.8 percent in Northern coastal region, 73.4 percent to 89.8 percent in Central, Eastern and Southern Uttar Pradesh 68.8 percent in Eastern part of West Bengal and 85.7 percent in Himalayan region of West Bengal.

**Table - 1.1 (2) : Population Below Poverty Line 1999-2000 (Based on 30 days Precall Period)**

| S.No. | State/UT                  | Rural No. of Persons<br>(100,000) | Percentage of<br>Persons |
|-------|---------------------------|-----------------------------------|--------------------------|
| 1     | Andhra Pradesh            | 58.13                             | 11.05                    |
| 2     | Arunachal Pradesh         | 3.80                              | 40.04                    |
| 3     | Assam                     | 92.17                             | 40.04                    |
| 4     | Bihar                     | 376.51                            | 44.30                    |
| 5     | Goa                       | 0.11                              | 1.35                     |
| 6     | Gujarat                   | 39.80                             | 13.17                    |
| 7     | Haryana                   | 11.94                             | 8.27                     |
| 8     | Himachal Pradesh          | 4.84                              | 7.94                     |
| 9     | Jammu & Kashmir           | 2.97                              | 3.97                     |
| 10    | Karnataka                 | 59.91                             | 17.38                    |
| 11    | Kerala                    | 20.97                             | 9.38                     |
| 12    | Madhya Pradesh            | 217.32                            | 37.06                    |
| 13    | Maharashtra               | 125.12                            | 23.72                    |
| 14    | Manipur                   | 6.53                              | 40.04                    |
| 15    | Meghalaya                 | 7.89                              | 40.4                     |
| 16    | Mizoram                   | 1.40                              | 40.4                     |
| 17    | Nagaland                  | 5.21                              | 40.4                     |
| 18    | Orissa                    | 143.69                            | 48.01                    |
| 19    | Punjab                    | 10.20                             | 6.35                     |
| 20    | Rajasthan                 | 55.06                             | 13.74                    |
| 21    | Sikkim                    | 2.00                              | 40.4                     |
| 22    | Tamil Nadu                | 80.51                             | 20.55                    |
| 23    | Tripura                   | 12.53                             | 40.4                     |
| 24    | Uttar Pradesh             | 412.01                            | 31.22                    |
| 25    | West Bengal               | 180.11                            | 31.85                    |
| 26    | Andaman & Nicobar Islands | 0.58                              | 20.55                    |
| 27    | Chandigarh                | 0.06                              | 5.75                     |
| 28    | D & N Haveli              | 0.30                              | 17.57                    |
| 29    | Daman & Diu               | 0.01                              | 1.35                     |

| S.No. | State/UT    | Rural No. of Persons<br>(100,000) | Percentage of<br>Persons |
|-------|-------------|-----------------------------------|--------------------------|
| 30    | Delhi       | 0.07                              | 0.40                     |
| 31    | Lakshadweep | 0.03                              | 9.38                     |
| 32    | Pondicherry | 0.64                              | 20.55                    |
|       | All India   | 1932.43                           | 27.09                    |

Source : Planning Commission - Government of India.

Also among self-employed cultivating households, the poverty ratio ranges between 30 to 50 percent in several regions including Assam, Bihar, Jharkhand, large parts of Madhya Pradesh and Maharashtra, Orissa, Southern Rajasthan, coastal Northern Tamil Nadu, all regions of Uttar Pradesh (other than Western UP), and Eastern Himalayan regions of West Bengal. Thus, a significant population of agricultural workers including both self-employed and wages workers stay below the poverty line. They have poor purchasing power and command over goods and services. The annual growth rate of employment as such has decelerated from about 2.04 percent during 1983-1994 to 0.98 percent during 1994-2000. But the growth rate of agricultural employment has declined from 1.51 percent in earlier period to -0.34 percent during 1994-2000.

## **1.2. WOMEN IN AGRICULTURE**

According to Swaminathan, the famous agricultural scientist, "some historians believe that it was woman who first domesticated crop plants and thereby initiated the art and science of farming. While men went out hunting in search of food, women started gathering seeds from the native flora and began cultivating those of interest from the point of view of food, feed, fodder, fibre and fuel".

Women have played and continue to play a key role in the conservation of basic life support systems such as land, water, flora and fauna. They have protected the health of the soil through organic recycling and promoted crop security through the maintenance of varietal diversity and genetic resistance. Therefore, without the total intellectual and physical participation of women, it will not be possible to popularize alternative systems of land management to shifting cultivation, arrest gene and soil erosion, and promote the care of the soil and the health of economic plants and farm animals. (Prasad & Singh 1992)

That women play a significant and crucial role in agricultural development and allied fields including in the main crop production, livestock production, horticulture, post harvest operations, agro/ social forestry, fisheries, etc. is a fact long taken for granted but also long ignored. The nature and extent of women's involvement in agriculture, no doubt, varies greatly from region to region. Even within a region, their involvement varies widely among different ecological sub-zones, farming systems, castes, classes and stages in the family cycle. But regardless of these variations, there is hardly any activity in agricultural production, except ploughing in which women are not actively involved. In some of the farm activities like processing and storage, women predominate so strongly that men workers are numerically insignificant. (Aggarwal 2003) Studies on women in agriculture conducted in India and other developing and under developed countries all point to the conclusion that women contribute far more to agricultural production than has generally been acknowledged. Recognition of their crucial role in agriculture should not obscure the fact that farm women continue to be concerned with their primary functions as wives, mothers and homemakers.

Despite their importance to agricultural production, women face severe handicaps. They are in fact, the largest group of landless labourers with little real security in case of break-up of the family owing to death or divorce; inheritance laws and customs discriminate against them land reform and settlement programmes usually give sole title and hence the security needed for obtaining production credits to the husband. Agricultural development programmes are usually planned by men and aimed at men. Mechanization, for example alleviates the burden of tasks that are traditionally men's responsibility,

leaving women's burdens unrelieved or even increased. The excess burden of work on women ("the double day" of the farm work plus house work) also acts as a stimulus to have many children so that they can help out with chores from an early age. Extension workers almost exclusively aim their advice at men's activities and crops. In some regions, this bias may depress production of subsistence food crops (often women's crops) in favour of increased production of cash crops (often men's crops) in favour of increased production of cash crops (often men's crops) so that family nutrition suffers.

It may not be out of place to mention here that considering their dual responsibilities within and outside the home, it would be in the fitness of things that more and more in the village training is organized for rural farm women to suit their convenience with due realization that institutional training is important in its own place.

In order that farm women get a fair deal at the hands of change agents, one of the remedial measures that needs to be undertaken is to induct a sizeable number of well trained women personnel in training and extension programmes of agricultural development agencies at all levels and more so at the grass-root level.

According to 1991 census the male cultivators has increased in the country by 11.67 percent from 76.7 in 1981 to 85.6 million in 1991. The female cultivators however have increased at much faster rate of 45.23 percent from 14.8 million in 1981 to 21.5 million in 1991. As shown in table 2.1, the number of male agricultural labourer increased by 31.48 percent, but that of female by 36.45 percent. 74 percent of the entire female working force is engaged in agriculture operations. About 60 percent of agricultural operations like sowing of seeds, transportation of sapling, winnowing, storage of grain etc are handled exclusively by women, while in other jobs they share the work with women. Apart from participation in actual cultivation, women participate in various forms of processing and marketing of agricultural produce (Aggarwal 2003).

In rural India, the prosperity of the household depends on the prosperity of agriculture and allied occupation in any particular point of time vis-à-vis the role of women in innumerable activities connected with farming, dairying, sericulture etc.

But the women hands are invisible even to this day, so it is not surprising that the agricultural extension activities is mainly a male oriented pursuit.

### **Multi-Dimensional Role of Women**

- (i) Agriculture : Sowing, transplanting, weeding, irrigation, fertilizer application, plant protection, harvesting, winnowing, storing etc.
- (ii) Domestic: Cooking, child rearing, water collection, fuel wood gathering, household maintenance etc.
- (iii) Allied Activities: Cattle management, fodder collection, milking etc.

Mainly rural women are engaged in agricultural activities in three different ways depending on the socio-economic status of their family and regional factors. They are work as:

- (i) Paid Labourers
- (ii) Cultivator doing labour on their own land and
- (iii) Managers of certain aspects of agricultural production by way of labour supervision and the participation in post harvest operations.

The table - 1.2 (1) depicts the number of women workers engaged in agriculture:

**Table - 1.2 (1) : Women Workers in Agriculture (Million)**

| <b>Women Workers in Agriculture (Million)</b> |                    |                    |
|---|--------------------|--------------------|
| <b>Agriculture</b>                            | <b>1981 Census</b> | <b>1991 Census</b> |
| Cultivators                                   | 14.8               | 21.5               |
| Agriculture Labourers                         | 20.8               | 28.2               |

The participation of rural women in agriculture is increasing in spite of scientific and technological developments. The share of farmwomen in agricultural operations has been shown in the following Table 2.2.

**Table - 1.2 (2) : Share of Farm Women in Agricultural Operations**

| <b>Activity</b>   | <b>Involvement (Percentage)</b> |
|---|---------------------------------|
| Land preparation  | 32                              |
| Seed cleaning and sowing                                    | 80                              |
| Inter cultivation activities                                | 86                              |
| Harvesting-reaping, winnowing, drying, cleaning and storage | 84                              |

The Table 1.2 (3) given below shows that the average time spends by farmwomen in household and agricultural activities. In the peak season an active farmwoman spends five to nine hours per day on the farm. Agriculture and allied activities almost take the equal time and energy at par with household activities.

**Table - 1.2 (3) : Time and Energy Distribution by Rural Women**

| <b>Activities</b>                 | <b>Duration<br/>Hours/Min</b> | <b>Energy<br/>K. Cal.</b> | <b>Percentage</b> |
|-----------------------------------|-------------------------------|---------------------------|-------------------|
| Domestic activities               | 7.55                          | 903                       | 40.53             |
| Agriculture and allied activities | 7.00                          | 283                       | 39.69             |
| Sleep                             | 6.50                          | 284                       | 12.76             |
| Rest and Recreation               | 2.15                          | 155                       | 6.97              |
| <b>Total</b>                      | <b>23.20</b>                  | <b>2255</b>               | <b>100.00</b>     |

According to Joshi (1999), the productivity of female labour is low. It is also very low in agriculture sector. At the price level of 1980-81, in 1950- 51, the productivity per labour was Rs. 2305 which increased to Rs. 2794 and further increased to Rs. 3157 in 1990. The productivity has not doubled in last 40 years in agriculture sector whereas the mining and mineral sector productivity per labour is Rs. 13417, manufacturing sector of Rs. 11099, power gas and water supply sector Rs. 14608, construction sector of Rs. 16210, commerce and business Rs. 13136 and in other service sector, it is Rs. 14625. Thus productivity of agriculture labour is very low compared to other sector. It is also observed that the productivity of female agriculture labour is really low compared to that of male labour.

Female agricultural labours do not enjoy any maternity leave and do not get proper rest after childbirth.

**Table 1.2 (4) : Percentage distribution of workers (main + marginal) according Categories of worker by sex and by sector during 2001 for India.**

| <b>Categories<br/>of Worker</b>           | <b>Rural</b>  |             |              | <b>Urban</b>  |             |              | <b>Combined</b> |             |              |
|---|---------------|-------------|--------------|---------------|-------------|--------------|-----------------|-------------|--------------|
|   | <b>Female</b> | <b>Male</b> | <b>Total</b> | <b>Female</b> | <b>Male</b> | <b>Total</b> | <b>Female</b>   | <b>Male</b> | <b>Total</b> |
| Cultivators                               | 36.46         | 42.19       | 40.14        | 4.26          | 2.99        | 3.21         | 32.51           | 31.34       | 31.71        |
| Agricultural labours                      | 43.4          | 27.48       | 33.20        | 11.03         | 3.42        | 4.71         | 39.43           | 20.82       | 26.69        |
| Household Industry workers                | 5.44          | 2.83        | 3.77         | 12.93         | 3.50        | 5.10         | 6.36            | 3.02        | 4.07         |
| Other Workers                             | 14.70         | 27.49       | 22.90        | 71.77         | 90.09       | 86.98        | 21.70           | 44.82       | 37.52        |
| All workers                               | 100.00        | 100.00      | 100.00       | 100.00        | 100.00      | 100.00       | 100.00          | 100.00      | 100.00       |
| Total workers (main+marginal In Millions) | 111.46        | 199.20      | 310.66       | 15.59         | 76.26       | 91.86        | 127.05          | 275.46      | 402.51       |

According to table 1.2(4) about 36.50 percent women work as cultivators and 43.4 percent as agricultural labours. Table 1.2(5) gives the number of women in agriculture, plantation and other rural activities :

**Table - 1.2 (5) : Statistics about Women in India**

|     |   |                |
|-----|---|----------------|
| 1.  | Total Women Population (2001)   | 494.83 million |
| 2.  | Total Women Workers (2001)  | 127.05 million |
| 3.  | Total Women Main Workers (2001)   | 72.65 million  |
| 4.  | Total Women Marginal Workers (2001)   | 54.40 million  |
| 5.  | Total Women Owner Cultivators (2001)  | 41.30 million  |
| 6.  | Total Women Agriculture Wage Workers (2001)   | 50.09 million  |
| 7.  | Total Women Household Industry Workers (2001)   | 8.08 million   |
| 8.  | Total Women Other Workers (2001)  | 27.57 million  |
| 9.  | Total Women in Organized Sector (1999)  | 4.80 million   |
| 10. | Total Women in Livestock, Forestry, Fshing, Hunting, Plantation, Orchards and activities (1991) | 1.32 million   |

Note: For serial numbers 1 to 8 Censuses 2001

For serial number 9th Tenth Five Year Plan

For serial number 10 census 1991

Table 1.2 (6) and 1.2 (7) gives the average daily wage rates of male and female workers in June 2001 and during 1999-2000 respectively.

According to table 1.2 (4) about 36.50 percent women work on cultivation in the farm. While table gives the number of women workers in different sectors.

**Table - 1.2 (6) : Average daily wage rates for agricultural and non-agricultural Occupations in India**

| Occupation    | Sex    | June 2001 |
|---------------|--------|-----------|
| Ploughing     | Female | 42.16     |
|               | Male   | 66.10     |
| Sowing        | Female | 41.58     |
|               | Male   | 57.92     |
| Weeding       | Female | 43.26     |
|               | Male   | 51.23     |
| Transplanting | Female | 47.03     |
|               | Male   | 58.28     |

| <b>Occupation</b> | <b>Sex</b> | <b>June 2001</b> |
|-------------------|------------|------------------|
| Harvesting        | Female     | 45.77            |
|                   | Male       | 55.67            |
| Winnowing         | Female     | 44.08            |
|                   | Male       | 51.94            |
| Threshing         | Female     | 44.22            |
|                   | Male       | 52.64            |
| Picking Cotton    | Female     | —                |
|                   | Male       | —                |
| Cane Crushing     | Female     | 39.32            |
|                   | Male       | 56.98            |

Source : Men and Women in India.

**Table 1.2 (7) : Average Wage Earning Received per day by casual labours by sex, Type of operation and Industry during 1999-2000**

| <b>Rural</b>                             |                                |               |             |
|--|--------------------------------|---------------|-------------|
| <b>Category</b>                          | <b>Type of Operation</b>       | <b>Female</b> | <b>Male</b> |
| Casual Labours in<br>Other type of Works | (a) Manual Work in Cultivation | 38.06         | 48.14       |
|  | Ploughing                      | 27.91         | 39.09       |
|  | Sowing                         | 32.73         | 41.81       |
|  | Transplanting                  | 28.37         | 38.78       |
|  | Weeding                        | 29.22         | 39.15       |
|  | Harvesting                     | 25.74         | 34.68       |
|  | Other Cultivation activities   | 29.24         | 39.21       |
|  | (b) Manual Work in other       | 27.65         | 39.27       |
|  | Agricultural                   | 30.65         | 44.84       |
|  | Activities                     | 33.34         | 46.45       |
|  | Forestry                       | 41.30         | 61.59       |
|  | Plantation                     | 21.88         | 28.14       |
|  | Animal Husbandry               | 55.73         | 57.74       |
|  | Fisheries                      | 27.96         | 42.64       |
|  | Other Agriculture activities   | 27.34         | 42.31       |

| Category | Type of Operation   | Female | Male  |
|----------|---|--------|-------|
|          | (c) Non-Manual work in cultivation                        | 34.98  | 56.49 |
|          | (d) Non manual work in activities other than Cultivation. |        |       |
|          | All   | 29.01  | 44.84 |

**Table - 1.2 (8) : Per Thousand Distribution of Female headed households by Household type for each size class of land cultivated for rural Areas in India during 1999-2000**

| Size Class of Land cultivated (Fig. In hect.) | House Hold Type   |                 |           |                     |              |           |        |       |                                      |
|---|-------------------|-----------------|-----------|---------------------|--------------|-----------|--------|-------|--------------------------------------|
|   | Self Employed in: |                 | Sub Total | Agricultural Labour | Other Labour | Sub Total | Others | Total | Per 1000 distribution of households. |
|   | Agriculture       | Non-Agriculture |           |                     |              |           |        |       |                                      |
| 0.00  | 16                | 105             | 121       | 391                 | 88           | 480       | 397    | 1000  | 561                                  |
| 0.01 - 0.40                                   | 321               | 66              | 388       | 276                 | 61           | 336       | 275    | 1000  | 245                                  |
| 0.41 - 1.00                                   | 614               | 41              | 656       | 160                 | 26           | 187       | 156    | 1000  | 103                                  |
| 1.01 - 2.00                                   | 720               | 16              | 736       | 114                 | 9            | 123       | 141    | 1000  | 56                                   |
| 2.01 - 4.00                                   | 815               | 15              | 830       | 16                  | 0            | 16        | 154    | 1000  | 23                                   |
| 4.01 and above                                | 905               | 38              | 943       | 0                   | 23           | 23        | 34     | 1000  | 11                                   |
| All   | 221               | 81              | 302       | 310                 | 68           | 378       | 318    | 1000  | 1000                                 |

Source : National Sample Survey Organization, 55th round (July 1999 - June 2000)

Table 1.2 (8) shows that higher the land holding, small is the number of women heading the households. In fact, out of 1000 household of women cultivator 909 are headed by women having less than one hectare.

According to latest UNDP report, the gender related development index of developed and developing countries where India has the rank of 108th.

As men migrate in search of better-paid work, women in rural India are taking over agricultural work in the villages. They face meager wages, long hours, hazardous work and sexual harassment. Figures from the census show that, amongst rural women, the percentage of "marginal workers" (defined as working for less than 183 days per year) has increased significantly from 8.1 per cent in 1991 to 14.2 percent in 2002. During the same period, there 'was a sharp fall in the percentage of "main workers" (more than 183 days a year), especially male workers, coming from rural areas. The figures thus show a casualization and feminization of the workforce in rural areas, with the number of marginal women workers becoming larger and more significant, while male main workers in rural areas have declined.

These changes also coincide with the period of the 1990s, when India really began to part of a globalize economy. Some of the changes that have ensured the huge displacement of labour from agriculture are given below.

- ❖ A shift from subsistence farming to marketable crops - irrespective of regions, changes in crop patterns showed a common trend: all the shifts resulted in a decrease in the labour required.
- ❖ Greater use of labour-displacing machinery.
- ❖ A change in land use patterns-from agriculture to urban, industrial areas., or brick kilns; and in coastal areas, to export-oriented aquaculture. All the new activities displace labour from agriculture, but create fewer jobs than they destroy.

### **More Work, Less Pay**

The estimates for changes in the last 5-7 years show declines in employment ranging from 20 per cent to as much as 77 per cent. Employment in agriculture is thus available for fewer days per year. It is therefore becoming essential for men to migrate in search of better-paid work. Women are filling this vacuum. Women are forced to accept work in agriculture in their own village under very bad conditions because they cannot migrate as easily as men.

The dependence of women's labour on family farms, especially during the peak periods of sowing and harvesting, has become very common. About 15 years ago, agricultural work was considered acceptable for poor tribal women, Muslim women today even, who were traditionally bound by rules of purdah, go out to work for wages in the fields in certain areas.

Farmers, on the other hand, also seem to prefer women as agricultural workers. The farmer is faced with the increasing costs of production required for modern agriculture. He finds that he can squeeze his labour costs by using lower-paid women workers. For instance, women are preferred to men in North 24 Parganas (West Bengal) by the owners because they are docile, require lower wages and are less lazy than men. Similarly, the work of women within family-based agriculture is preferred because it is cheaper than hiring labour.

Women agricultural workers, although they represent a big proportion of all women workers, continue to receive lower wages than men. The Ministry of labour puts the difference at 60 per cent of men's wages, while the Indian Labour journal showed that women received 75 per cent of men's earnings. The wage differentials prevailing in some states are given in table -1.

While earnings from agricultural work have not improved for women, modernization of agriculture has in some cases brought new kinds of problems and demand.

The existence of patriarchy at all levels also intertwines with the work-related problems of women. A study on the feminization of agricultural labour in Andhra Pradesh shows that despite the increasing involvement of women in paid work. Women's relative power within the family had declined.

**Table 1.2 (9) : Male/female wage rates in Indian agriculture**

| Trade union and State            | Wage rate for adult men  | Wage rate for women      |
|----------------------------------|--------------------------|--------------------------|
| Haryana                          | Rs. 50-60                | Rs. 25-30                |
| Saharanpur, (Uttar Pradesh)      | Rs. 60                   | Rs. 35-40                |
| North 24 Parganas, (West Bengal) | Rs. 40 (6 hours of work) | Rs. 25 (6 hours of work) |
| Andhra Pradesh                   | Rs. 40-50                | Rs. 25-30                |

The effects of increased commercialization of agriculture are impacting on women labourers in certain more indirect ways. While consumer goods, advertisements, video parlors, television, etc. have invaded villages; increasing seasonal migration has also exposed rural workers to more affluent areas and to cities. One of the noticeable impacts of this is an increased desire for consumer goods. Spiraling demands for dowry are seen as one of the easiest and fastest ways to meet this desire. Dowry is thus spreading to communities where it did not exist before. In tribal families, where a bride price was the practice, the girl's family now has to buy the groom all the goods that make a fat dowry. The bride price is only a token. Mortgaging and selling of land to meet the dowry demands of the bride groom's family has become an important mechanism by which poor and marginalized farmers lose their land.

A study on land rights for women in West Bengal recently found that 39.9% of the house holds surveyed have had to part with land or raise loans at high interest rates in order to pay dowry. In fact 79% of the families who sold land to pay for dowry were Muslim - a commonly where dowry was not a tradition. In addition, the people who were selling or mortgaging their lands for dowry were agricultural labourers and marginal farmers.

Agro chemicals have become an integral part of the development. process of agriculture and the use is expected to increase manifold in India. Fertilizer too a large extent have not affected women's role adversely, but the weedicides and herbicides have almost replaced the manual uprooting of weeds and hoeing for destroying weeds. In important crops like rice and wheat, weeding and hoeing used to employ a large number of female labour days/acre. With the introduction of chemicals to destroy weeds, women's participation has almost ceased. Thus, herbicides have affected women's employment adversely as they were the principal labour for weeding. (Singh and Punia 1991)

On the other hand, women from landless families do not get fodder for their animals which they used to get from farmer's field in lieu of wages or on mutual interest basis, keeping of animals on purchased fodder is difficult for poor families, there by depriving them of the animal products and by products in their diet.

Due to the use of agro-chemicals women are exposed to several health hazards such as gynecological infections, arthritis, intestinal and parasitic infections.

Biological technologies in terms of high yielding and short duration varieties have offered better remunerations and intensifications of crops production thereby increased labour absorption capacity in the agriculture sector. With the development of biotechnology there is every possibility of propagation of plant and animal species in the petridishes in laboratories (tissue culture technology). Under these circumstances, women folk employed in raising nurseries would be left in large. (Singh and Punia 1991)

Agriculture growth has not alleviated female poverty; rather it appears to have set in motion process, which in the long run could worsen the situation in many regions of the country.

### **Women in Decision Making in Agriculture**

Women's role in agricultural operations, animal husbandry and other economically productive activities is very significant. They contribute about 60-70 percent of the labour required for these activities thus playing a pivotal role in sustaining economy. The decision making process is an important segment of every household because it makes implementation of a plan or programme quite easy.

In rural areas of the country, both husband and wife are jointly responsible for making decisions on matters like family obligations, specific housing charges and purchase of household articles. However, women's suggestions are not given due consideration in the decisions pertaining to agricultural sector and important family matters. It is because the majority of women are illiterate, have little time to know about the latest techniques of farming and restricted mobility due to several cultural taboos.

In an interview with female respondents, it was noticed that male members only sought their consent whereas their suggestions/objections were not taken into account. Thus it was evident that women had to play second fiddle to men in decision-making. Another study conducted in Haryana, revealed that farm women did not decide independently about any farm operation but participated in almost all the decisions and dominated only decisions more related to home sphere i.e. storage of farm produce, purchase/sale of animal and credit. The table 7.1 shows the decision making process of women in agriculture in Himachal Pradesh. (Bala, 2003)

We generally talk of women's empowerment, which can be said that women should have powers to determine their own actions, power to have an authority to make decisions and guide their destiny. This power in decision making can be acquired and exercised only if they have a thorough knowledge about the various programmes, plans and current issues, access to the basic human development and social policies.

Generally, women have less access to information about technology by virtue of their inferior educational status and relative isolation from public life. Thus, there is a hesitation to come out and interact. At times, even the suggestions of knowledgeable rural women are ignored or are not taken seriously because men consider it disgraceful to accept the decision of women. This is because traditionally men have been major lawmakers of society. Many policies and decisions neglect women and undermine their abilities and roles.

The undesired restrictions imposed by elderly people in the society on their daughters and daughters-in-law should be relaxed to facilitate their mobility in order to have easy access to the outer world.

Most importantly, the women should have a penchant for self-empowerment through enhancing their knowledge and skills. Empowerment without any change in men's attitude or without their willingness will only aggravate family problems, increasing dissatisfaction and ensuring that women will continue to be at the receiving end.

Government policies should be framed to provide legal support and instill confidence in women. Programmes should be developed exclusively for women; to build leadership skills for managing agricultural community based development activities. Access of technology, inputs and credit has to be ensured predominantly through women extension workers. They should be trained in farm management skills and made capable of taking even complex decisions like shifting from subsistence farming to diversified agriculture, with stand competition from market forces improvement in work or farm efficiency etc.

The extent of participation in the decision-making activities in house hold and agriculture related and other socio-culture affairs reflects the status of women in the family as well as society. Table 7.2 shows the activities by decision makers in household related activities in Orissa. (Chaudhary 2004)

Table 7.3 shows that major decision regarding purchase of every household items are taken by males. Decisions in matters of food and clothing more or less have an equal participation rate between males and females. But decision regarding savings and investments and purchase of household assets is taken by males i.e. 83.5 per cent and 81.3 per cent respectively. As the male members control the finance, this creates an adverse impact on women's access to household assets and other household activities (Chowdhary 2004)

Table 7.4 shows that the major decision makers in agricultural activities are men even though women performs more in agricultural related activities than men. Even they need not be consulted at the time of purchase of animals or change of crop.

An average, a women spends 14 hours a day working in and outside the home. During harvesting season she spends about 16 hours a day. The question arises why women's role in the economy is not recognized and has given such an inferior position?

**Table - 1.2 (10) : Decision Making Pattern of Rural families**

| Activity                                     | Decision Making Pattern (Percent) |              |                          |
|--|-----------------------------------|--------------|--------------------------|
|  | Male Share                        | Female Share | Joint by Male and Female |
| Adoption of HYVs                             | 83                                | -            | 17                       |
| Use of fertilizers/plant Protection measures | 80                                | -            | 20                       |
| Purchase of farm Machinery                   | 72                                | -            | 28                       |
| Purchase and sale of animals                 | 21                                | -            | 64                       |
| Sale of milk and milk products               | 11                                | -            | 78                       |
| Procurement of Credit                        | 50                                | -            | 50                       |
| Marketing Farm Produce                       | 32                                | 6            | 62                       |
| Investment of added profit                   | 26                                | 7            | 67                       |

(Bala 2003)

**Table - 1.2 (11) : Men and Women involved in different activities in agricultural Sector**

| Activities              | Women  | Men                  |
|-------------------------|--|----------------------|
| Household Activities    | Cooking (grinding, cutting<br>Preparing food etc | —                    |
|                         | Sweeping, washing Clothes<br>& utensils          | —                    |
|                         | Fetching water                                   | —                    |
|                         | Collecting water                                 | —                    |
|                         | Making cow dung-cakes                            | —                    |
| Child Care              | Feeding children                                 | —                    |
|                         | Taking care of children                          |                      |
| Agricultural Activities | Digging  | Ploughing, digging   |
|                         | —  | Irrigation of fields |
|                         | Harvesting crops                                 | Harvesting Crops     |
|                         | Sowing   | Sowing               |
|                         | Weeding  | —                    |
|                         | Cutting grass from fields                        | —                    |
|                         | Groundnut picking                                | —                    |

| <b>Activities</b>                | <b>Women</b>   | <b>Men</b>                              |
|----------------------------------|--|---|
| Selling<br><br>Allied Activities | Husking/winnowing  | —                                       |
|                                  | Vegetable plucking   | Vegetable plucking                      |
|                                  | —  | Fertilizing                             |
|                                  | Sells Vegetables, groundnuts, cereals, sometimes sells fuel wood | Occasionally                            |
|                                  | Feeding cattle, milking & Bathing the cattle sometimes           | Cattle feeding, milking, bathing cattle |
|                                  | Cleaning of cattle shed  | Cleaning of cattle shed sometimes       |

(Sarmishtha Chaudhry 2004)

**Table - 1.2 (12) : Involvement of Women in Decision Making (Household Related Activities)**

| <b>Involvement of Women in Decision Making (Household Related Activities)</b> |             |               |                      |
|---|-------------|---------------|----------------------|
| <b>Decision-Making Items</b>  | <b>Male</b> | <b>Female</b> | <b>Male + Female</b> |
| Food  | 36.9        | 32.4          | 30.5                 |
| Clothing  | 38.4        | 28.3          | 33.2                 |
| Education of Children   | 55.2        | 22.0          | 22.7                 |
| Health  | 60.4        | 17.9          | 21.6                 |
| Marriage of Children  | 69.4        | 8.2           | 22.3                 |
| Savings & Investment  | 83.5        | 7.0           | 9.3                  |
| Purchase of Assets  | 81.3        | 4.1           | 14.5                 |

(Sarmishta Chaudhary 2004)

**Table - 1.2 (13) : Decision - Making in Agricultural Activities**

| <b>Decision - Making in Agricultural Activities</b> |             |               |                      |
|---|-------------|---------------|----------------------|
| <b>Decision-Making Items</b>                        | <b>Male</b> | <b>Female</b> | <b>Male + Female</b> |
| Purchase of Fertilizer                              | 90.2        | 2.9           | 6.8                  |
| Purchase of Animals                                 | 93.1        | —             | 6.8                  |
| Purchase of Agricultural Equipments                 | 92.1        | 1.9           | 5.8                  |
| Changing of Crops                                   | 96.0        | —             | 3.9                  |
| Selling of Crops/Cereals/Vegetables                 | 83.9        | 10.7          | 5.3                  |

The poor participation of women in agriculture sector is also confirmed in a study conducted by Sethi (1991) in Himachal Pradesh, where women's opinion is not normally considered and their opinions is also not considered in the matters related to participation in developmental activities. The social role as a decision maker in the production and the distribution of products and their participation and representations in village developmental activities has not changed over the time. In all such social relations men continue to dominate the scene and there exists no parity of decision making in gender relations.

Moreover, women's exclusion from public life keep them out of the decision making process related to various rural developmental activities such as the utilization of loans and subsidies under the various Integrated Rural Development Programme (IRDP) schemes. Women also fail to get loans sanctioned for agricultural development or various schemes under Rural Employment programme (REP) women have no representation in the Agricultural Marketing Committees and other similar bodies. The governmental and non-governmental organizations (NGO) also prefer men for these purposes. Thus, the ideology of segregation and seclusion of women helps in keeping them out of the various decision making process concerning the various facts of rural development. It is for this reason that to find that whereas women's labour is utilized for both productive as well as non-productive work, the various source of power lies in the hands of men only.

#### **Women in Plantation - Faulty Policy of Liberalization**

In India, plantation sector occupies a unique position due to its agro industrial features and large number of women in employment. Women are more preferred by the plantation authority because they can be employed on low wages and are more committed. Also they can be easily convinced for the unauthorized deduction from wages, as well as delayed wages because of their subservient nature and low level of education and awareness (Bhadra 1991).

The special feature of plantation is that it not only employs the men members, but also women and children above the age of 12 years and women have an important role to play. The reasons for this are:

- (a) Plantation work is only a special kind of agriculture off work, familiar to Indian women, the vast majority of them live in rural areas.
- (b) Facilities have been given to make workers to settle down on or in the vicinity of the plantation and to take their families and wives with them.
- (c) Under the old system, labour contract was based on the principle of utilizing every able bodied persons of the family and fixing the rates accordingly.
- (d) Many women had to seek employment in order to balance the family budget, although the contract system has been abolished the wage system.
- (e) As the entire labour force is residential, the women can take up employment without causing serious disruptions to the family.

The social and demographic profile of the workers in plantation sector such as rubber indicates certain interesting patterns. The sex wise segregation of the workers reveals striking skewed distribution of work force with lower participation of women. However a probing into the poor participation of women in the occupation revealed 'the invisible participation of women' is more than two thirds of the cases. Quite often, the male tapers are found supported by female members and even children of the family. The male tapers who are as the de jure workers get considerable assistance from their family members for collecting the latex, transportation of latex and preparation of rubber sheets; Usually the male tapers start tapping in the pre early hours of the day and the women and children are found joining the work with a lag of two-three hours. Here; though the work is carried out collectively, the contribution of women and children remain invisibles as they are neither recognized nor remunerated as assistants. The lower absorption of women labour in rubber holdings has been cited as a major issue in the development discourse of the state, with the commendable increase in the area under the crop at the cost of female labour intensive crops such as paddy. To sure of the officials of Rubber Board of India, this argument was one of the factors that tempted the Board to choose a logo that illustrated female tapers at work. (Remesh 2004)

The lower participation of women during the initial hours of tapping is mainly due to their engagement in domestic chores. Preparing break fast and lunch, sending the younger ones to schools, cattle care and so on carried out by women members, before joining along with some food as helpers during later hours in the morning.

In the tea gardens the female permanent workers generally do the plucking. The other work maintenance of plantation, pruning, spraying are done by male workers. During the peak season minor girls from the labour families particularly women and children from neighbouring villages are employed for plucking of leaves.

India is the fourth largest producer of natural rubber in the world after Thailand, Indonesia and Malaysia and at the same time is the fourth largest consumer after USA, Japan and South Korea. Rubber cultivation in India had been traditionally confined to the narrow belt extending from Kanyakumari district of Tamilnadu to West of Western Ghats. Within this zone, Kerala assumes considerable significance with 86 percent of the area and about 95 percent of rubber production. Within Kerala, Travancore - Cochin region continues to be the dominant belt of rubber cultivation, with 72 percent of total area under the crop and 75 percent of the rubber tapped area.

Today, rubber cultivation has expanded tremendously in Kerala taking about 48 lakh hectares, which has the second position in terms of area after coconut. Though there are no reliable estimates available, it is widely understood that within the holding sector, the share of small and tiny holdings (less than 5 ha) is significant in terms of area, production and employment. For instance, a recent study reports that the share of smallholdings with an average size of less than 2 hectares in total area under rubber has increased from 53 percent in 1955-56 to more than 83 percent in 2001, with an average holding size is less than 0.5 ha (Viswanathan et.al. 2003)

Unfortunately, the rubber economy of Kerala particularly its small holding sector undergoing a phase of crisis since 1996 November, with a trend of price crash of unprecedented scale and proportions. From its all time peak of Rs. 70 per kg, the market price of rubber has gone down to Rs. 26 by 2000 AD. This drastic decline in rubber prices is widely attributed to faulty import policy of liberalization of the rubber economy in a globalization regime that commenced since early 1990s and acquired momentum by the mid 1990s, after India joined WTO (Remesh 2004).

Following the onset of the era of trade liberalization in the farm products and the concomitant implementation of the Agreements of Agriculture (AOA) under the regime of WTO from 1995 onwards, the agriculture products in general and plantation products in particular have experienced considerable levels in price crash.

There is an apprehension that the removal of quantitative restrictions on imports has led to steady increase in the cost of production in plantation sector. In case of rubber, more importantly, the integration of Indian market to that of international is reported to have led to the building up of huge surplus stocks. This in turn brings down the price, thereby intensifying the problem, of grower and pepping the job prospects to the thousands of tapers and the women associated with them. Production and supply of natural rubber is far in excess of the domestic needs.

Due to this unprecedented fall in price of the produce, small growers in Kerala are finding it difficult to pay even the wages. To minimize cost of production, wage cuts and deferments in wages or other monetary benefits are being resorted to continue tapping and the workers employed. Several growers have already resorted to large scale cost cutting of various essentials such as minimization of fertilizer use, pesticide spraying, soil developments, land up gradation and even deferring replanting.

As the tapers are also well aware of the price crash, there is a growing tendency among tapers to empathies the small growers and to respond to their grievances compassionately.

In many cases, tapers have agreed to defer the wage payments till the sale of produce and also sympathetically considered the growers viewpoints while demanding compensation and other benefits. In some cases, it is noted that the growing understanding between the employer and employee, in the period of crisis has resulted in the product sharing arrangement in place of piece rate wage system.

During the period of continuing price crash in the rubber economy, tapers are fully aware that there is no point in collectively bargaining for a wage revision, which is simply unaffordable by the farmer. Due to this, they are even ready to continue in the job without any wage revision, though the wages in the alternative rural occupation and the cost of living of the workers have shot up considerably.

There are also certain shortcomings in the existing framework of legislation, which considers plantation as large-scale cultivation. For instance, the labour in small and tiny rubber holdings (below 5 ha) are out of the reach of the protective framework of the Plantation labour Act of 1951, which defines "plantation" as any land used for intended to be used for growing tea, coffee, rubber which

ad measures 5 ha or more and in which fifteen or more persons are employed or were employed on any day of the preceding twelve months”

This classification irrespective of the fact that there has been an ‘increasing tendency of fragmentation of holdings in all plantations crops in the recent decades, leading to a gross exclusion of a major chunk of plantation workers from the protective provision of labour legislation, like supply of drinking water, suitable medical facilities, crèches as well as bonus, gratuity and provident fund.

It is beyond argument that the penetration of globalization and the resultant price crisis has led to a gross erosion of increase or bargaining power of the workers. Given the context of the general crisis in the economy, the tapers are not finding any alternative employment and are forced to continue with “their present engagements, despite the fact that the wages are not revised for the past few years. In addition this unprecedented stagnation of wages, some tapers and women workers are even anticipating further wage cut in the near future.

Tea plantation workers in Kerala, West Bengal and Tamil Nadu are facing starvation; following the closing down of several small and medium companies. The reason, the unrestricted imports and a sharp fall in international price of tea. The ugly reality of the resulting poverty writ large on the faces of malnourished women and children and disillusioned them. Once safely engaged in plantation work is the tragedy story of ‘market driven’ humanitarian crisis.

In the past few years, ever since economic liberalization became the development mantra, Kerala has been at the receiving end. Flooded with cheap and highly subsidized agricultural imports, its agrarian economy has been thrown out of gear. Whether it is the import of palm oil, rubber or coffee, or tea almost every aspect of the State’s socio-economy has been negatively impacted.

Coconut prices have crashed from Rs. 10 to Rs. 2, Rubber has plummeted from Rs. 60 to Rs. 16 per kg and coffee from Rs. 58 in 1999 to Rs. 30 per kg in 2000. Even spices have hit, spared with pepper prices falling from Rs. 2,600 to Rs. 1,300 per quintal in the consecutive period. While Kerala’s farmers are naturally a worried lot, the changing global intellectual property rights (IPRs) regime is certain to further throttle domestic agricultural research, which, in turn, will impact farm production. And the repercussions will eventually be felt by the industry, which will find the export market restricted and monopolized by the patent-holders.

Kerala is not alone. The destructive fallout from the emerging global trade paradigm is being felt all over the country, if not in the same magnitude. But before analyzing the bitter political harvests and the growing disenchantment with the World Trade Organization (WTO), it is important to understand why and how the market rules play against the Indian farmers and for that matter, farmers in the developing countries

Now in Assam, every worker in the estates gets 6 kgs of cereal in 15 days. A male worker is also entitled to get 6 kgs of cereal for his wife and 3 kgs for each of his children. However, if the only

## Women : The Foundation of the Dairy Industry



permanent worker in a household is a woman, whatever may be her family size, she is entitled for her quota of ration only (Das 2002)

Scenario is worst in West Bengal, thousands of jobless families have survived by eating rats and snakes in their villages. There were no snakes or rats left in the plantations as all these had been caught and eaten by hungry workers. A shocked supreme court had sought the West Bengal Government's response on an expert panel's report, which said that deaths due to starvation among workers of abandoned tea garden have assumed "disastrous proportions"

### **Women in Dairy Sector**

The overall farming performance is the farming productivity behaviour of farm women comprising six components viz. cropping intensity, cropping yield index, milk yield index, level of adoption, commercialization index and expansion/diversification index in a rice based farming system. The result indicate that there is significant difference between small, medium and large farms women with respect to overall farming performance. It is observed that small farm women had less cropping intensity, crop yield index, level of adoption, commercialization and expansion/diversification index when compared to medium and large women. However, in case of milk yield index, small farmwomen are on par with medium but higher than the large farmwomen. (Reddy 2003)

According to Verma (1992), Animal Husbandry is predominantly a male affair in case of high, economic status as majority of them employ, permanent male labour to look after the animals, whereas it is predominantly a female affair in case of farmers of medium and low socio-economic status. On an average, a woman devotes 3.5 hours per day for animal husbandry activities against only 1.6 hours per day devoted by men in this category.

Women accounted for 93% of total employment in dairy production. Depending upon the economic status, women perform the tasks of collecting fodder, collecting and processing dung. Women undertake dung composting and carrying to the fields. Women also prepare cooking fuel by mixing dung with twigs and crop residues. Though women play a significant role in livestock management and production, women's control over livestock and its products is negligible. Men, leaving only 14% to women, assume the vast majority of the dairy cooperative membership.

In tribal communities in low rainfall, semi-arid and arid areas much of the work with regard to animal management has to be looked after by women due to migration of males for work. However, in many cases the income from dairy animals does not remain in the hands of women and neither does the decision regarding sale and purchase. However, due to the move to develop women's dairy co-operatives in many states in India women have better control over sale of milk and use of income from it. Another positive development is recognition of women as members of dairy co-operative societies, so that the price of milk supplied to the society can be paid to the women directly. Till a few years ago women were not made registered members of the dairy co-operative society (the registration was in the name of the husband and thus he collected the money for milk produced and supplied by the women).

Women are well aware of each animal's behaviour and production characteristics. Women are knowledgeable about local feed resources and are able to identify beneficial grasses, weeds and fodder trees for feeding of dairy animals. While the contribution of women to the animal's management is recognized, the experiences of women regarding animal diseases and their perceptions are ignored. Now there is some realization about the knowledge possessed by women and the need to improve their knowledge, skills and awareness.

**Feeding :** Participation of women in indoor feeding activities such as providing water to animals, mixing ration and preparing feed is very high. As far as the involvement in outdoor activities is concerned, such as cutting and transportation of fodder, the deployment of women is low.

**Health care :** The share of rural women is found more in all animal health care related activities performed at home. Activities like care of sick animals, care of animals during pregnancy, care of newly born calf and applying and giving medicine at home are performed jointly by women members of the family.

**Processing and marketing related activities :** The participation of rural women in processing activities is found higher than in marketing related activities such as purchase of animals, selling of milk, disposal of animals etc.

**Management :** Women perform all the activities related to management of animals like cleaning of animals and their shed, milking and making cow dung cakes.

In India, Animal Husbandry is a vocation for millions of small farmers and land less people, a large percentage of them raise animals on crop residues and common property resources. When in some developed countries, less than 3% of the adult population is engaged in agriculture and animal husbandry, 70 percent of Indian population is dependent on agriculture and animal husbandry, of which 30 percent are landless. Women provide 60 percent of the livestock farming labour and more than 90 percent of work related to the care of animals is rendered by women folk of the family.

During 2001-02, the contribution of livestock sector to the country's GDP was 5.59 percent. The value of output of livestock and fisheries sector was estimated to be around 179544 crores, which is about 27.7 percent of the total value of output of Rs.648122 crores from agriculture and allied sectors. With an estimated output of Rs. 103804 crores, the contribution of milk was higher than paddy (Rs. 73965 crores), wheat (Rs. 43816 crores) and sugarcane (Rs. 28592 crores). Milk and livestock sector provides regular employment to about 11 million in principal status and 8 million in subsidiary status. Women in animal husbandry and livestock sector constitute 69 percent of the labour force as against 35 percent in crop farming (Economic Survey 2002-03).

Dairy farming has grown from largely unorganized, complex activity into a vast organized industry that encompasses not only increased production of milk and milk products, but also the breeding of higher yielding cattle, and the scientific rearing of cattle and production of cattle feeds. This has

proportionately increased the demand of trained manpower in this sector. However, the implementations of WTO policies will totally ruin the dairy sector and thus affecting the available employment opportunities.

A common feature in region where dairying is an important commercial activity of the rural population as in Gujarat and Punjab, is that it is the women folk who essentially maintain and manage the dairy cows and buffaloes. In areas, where the milk produced is channeled through dairy plants, bringing daily or weekly income to the household, the dairy activity raises the status of women.

Winner of the prestigious Magsaysay Award, Mrs. Ela Bhatt, highlights the need for giving women their due place in dairy development. For their empowerment and economic well being. Women's access to training in modern dairying and cooperative management is essential.

The membership in most of India's 70,000 village level dairy cooperative societies (DCS) is heavily dominated by men. The picture is now gradually changing in the favor of women. Efforts are on to give them their due place in dairy development.

Presently, some 2,476 all-women DCS are functioning in the country in selected States. Out of 9.2 million total memberships in DCS 1.63 million are women (18 per cent). However, women constitute less than three per cent of total board member.

### **Women Second in the Land Agenda**

The land reform measures adopted by the Indian Union or respective states are not in accordance with any personal law of any community. In matter of women's right to inheritance of agriculture land, states either have their own policy or refer it to the principle of personal laws. (Jyoti Gupta 2002)

In a discussion conducted by in West Bengal the women asserted the importance of ownership of productive resources in their name. Their first demand was, "We want land in our own name". Various reasons were forwarded by the women for such a demand. (Jyoti Gupta 2002).

1. Old age security if sons do not look after them.
2. The predominant notion that their daughters can inherit land if the mother has it in her own name.
3. Women can use the property to pay for their daughters' marriage in the absence of the husband; as sons usually inherit the property and may be unwilling to pay for their sister's marriage.
4. Lack of security in the matrimonial home, as women do not have any legal right to property, be it land, cattle or house.
5. Given the rise in the cases of divorce, desertion and physical violence against Women by husbands, the women expressed the urgent need for secure shelter, be it legal right to be homestead of their parents or land to cultivation.

6. The younger women especially those who have already divorced, deserted or remained unmarried, preferred to be given a share in the parents' property, be it land, house or both.
7. Women felt that they should have independent access to ownership of productive resources to be able to counter the system of dowry, as well as to free themselves of a dependent status all their lives.
8. The women also pointed out that apart from ploughing, they participate in all agricultural operations. Women who belonged to peasant households, but did not have to work as agricultural labourers also pointed out that they bear all responsibility for the agricultural produce once it is brought home from the field, yet they are not considered agriculturists or cultivators only their husbands are recorded as cultivators. Women felt that ownership in their name would make a difference to their access and control over the land. They also told that though they are capable of ploughing but they are not allowed.
9. While women do not have ownership rights recorded in their name, they however bear the responsibility of returning debts, incurred by their husbands in lieu of land mortgage.
10. Women are often not informed about such debts or transactions the husbands enter into with the assets of the family. The women felt that such a solution could be checked if they as owners were to be signatories to the transaction.

## **Right And Privileges Of Women In India**

### **1. Constitutional Provisions**

The Constitution of India not only grants equality to women but also empowers the State to adopt positive measures in favour of women for neutralizing the cumulative socio-economic, education and political disadvantages faced by them. Fundamental Rights, among others, ensures equality before the law, equal protection of law, prohibits discrimination against any citizen on grounds of religion, caste, sex or place of birth, and guarantees equality of opportunity to all citizens in matters relating to employment. Articles 14, 15, 15(3), 16, 39(a), 39(b), 39(c) and 42 of the Constitution, are of specific importance in this regard.

#### **Constitutional Privileges**

- (i) Equality before law for women (Article 14)
- (ii) The State not to discriminate against any citizen on grounds only of religion race caste sex, place of birth or any of them {Article 15 (i)}
- (iii) The State to make any special provision in favour of women and children {Article 15 (3)}
- (iv) The State to direct its policy towards securing for men and women equally the right to an adequate means of livelihood [Article 39 (a)]; and equal pay for equal work for both men and women [Article 39 (d)]

- (v) The State to make provision for securing just and humane conditions of work and or maternity relief (Article 42)
- (vi) The State to raise the level of nutrition and the standard of living of its people and the improvement of public health (Article 47)
- (vii) To promote harmony and the spirit of common brotherhood amongst all the people of India and to renounce practices derogatory to the dignity of women {Article 51 (A)(e)}
- (viii) Not less than one-third (including the number of seats reserved for women belonging to the Scheduled Castes and the Scheduled Tribes) of the number of seats to be filled by direct election in every Panchayat to be reserved for women and such seats to be allotted by rotation to different constituencies in a Panchayat {Article 243D (3)}
- (ix) Not less than one-third of the total number of offices of Chairpersons in the Panchayat at each to be reserved for women (Article 243D (4))
- (x) Not less than one-third (including the number of seats reserved for women belonging to the scheduled castes and the Scheduled Tribes) of the total number of seats to be filled by direct election in every Municipality to be reserved for women and such seats to be allotted by rotation to different constituencies in a Municipality {Article 243T (3)}
- (xi) Reservation of offices of Chairpersons in Municipality for the Scheduled Castes, the Scheduled Tribes and women in such manner as the legislature of a State may by law provide {Article 243T (4)}

## **2. Legislative Provisions**

### **Legal Rights**

To uphold the Constitutional mandate, the State has enacted various legislative measures intended to ensure equal rights, to counter social discrimination and various forms of violence and atrocities and to provide support services specially to working women.

Although women may be victims of any of the crimes such as 'Murder', Robbery, Cheating etc. the crimes, which are directed specifically against women, are characterized as 'Crime Against Women'. These are broadly classified under two categories

#### **(1) The Crimes Identified Under the Indian Penal Code (IPC)**

- (i) Rape (Sec. 376 IPC)
- (ii) Kidnapping & Abduction for different purposes (Sec. 363-373)
- (iii) Homicide for Dowry. Dowry Deaths or their attempts (Sec. 302/304-B IPC)
- (iv) Torture, both mental and physical (Sec. 498-A IPC)

- (v) Molestation (See. 3541 PC)
- (vi) Sexual Harassment (See. 509 IPC)

## **(2) The Crimes identified under the Special Laws (SLL)**

Although all laws are not gender specific, the provision of law affecting women significantly have been reviewed periodically and amendments carried out to keep pace with the emerging requirements.

Some acts which have special provisions to safeguard women and their interests are

- (i) The Employees state Insurance Act, 1948
- (ii) The Plantation Labour Act, 1951
- (iii) The Family Courts Act. 1954
- (iv) The Special Marriage Act, 1954
- (v) The Hindu Marriage Act, 1955
- (vi) The Hindu Succession Act, 1956
- (vii) Immoral Traffic (Prevention) Act, 1956
- (viii) The Maternity Benefit Act, 1961 (Amended Act, 1995) (ix) Dowry Prohibition Act, 1961
- (x) The Medical Termination of Pregnancy Act" 1971
- (xi) The Contract Labour (Regulation and Abolition) Act, 1976 (xii) The Equal Remuneration Act, 1976
- (xiii) The Child Marriage Restraint (Amendment) Act, 1979
- (xiv) The Criminal Law (Amendment) Act, 1983
- (xv) The Factories (Amendment) Act, 1986
- (xvi) Indecent Representation of Women (Prohibition) Act, 1986 (xvii) Commission of Sati (Prevention) Act, 1987

## **3. Special Initiatives For Women**

### **(i) National Commission for Women**

In January 1992, the Government set-up this statutory body with a specific mandate to study and monitor all matters relating to the constitutional and legal safeguards provided for women, review the existing legislation to suggest amendments wherever necessary etc.

**(ii) Reservation for Women in Local Self-Government**

The 73rd Constitutional Amendment Act passed in 1992 by Parliament ensure one-third of the total seats for women in all elected offices in local bodies whether in rural areas or urban areas.

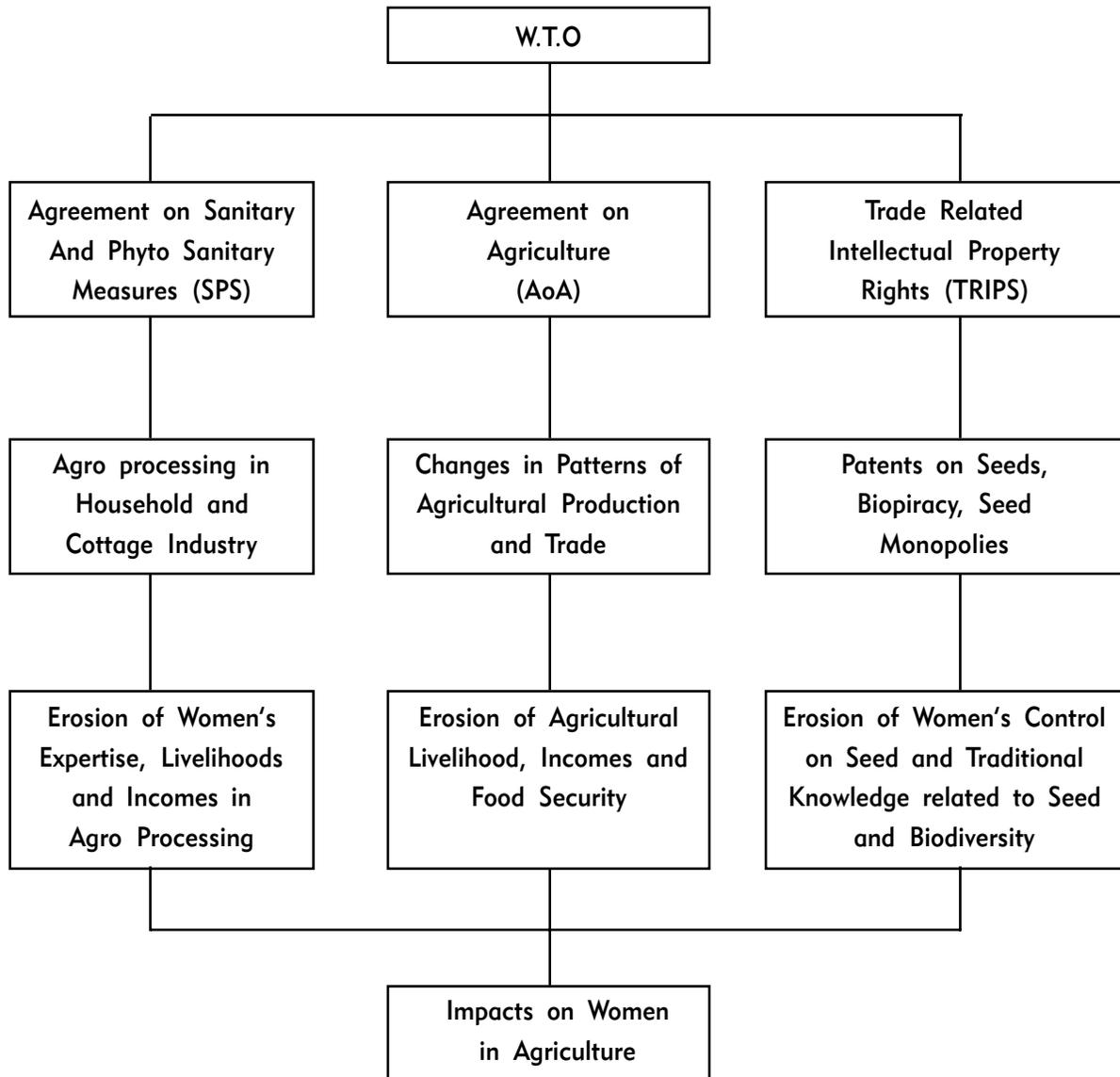
**(iii) The National Plan of Action for the Girl Child (1991-2000 AD)**

The plan of action is to ensure survival, protection and development of the girl child with the ultimate objective of building up a better future for the girl child.

**(iv) National Policy for the Empowerment of Women, 2001**

The Department of Women & Child Development in the Ministry of Human Resource Development has prepared a “**National Policy for the Empowerment of Women**” in the year 2001. The goal of this policy is to bring about the advancement, development and empowerment of women.

### 1.3 IMPACT OF WTO ON WOMEN



World Trade Organization (WTO) has provided a powerful forum for developed countries to erode the economic sovereignty of the Third World Countries including ours. Our market has been forced open for goods and services of the multinationals particularly holders of the monopoly rights in intellectual property services. Trade liberalization is ruining the small and cottage industries' and endangering the livelihood of the vast masses engaged in eking out existence in the self-employed sector of our economy. The media and large industries are facing stiff import competition and the brunt is being borne by the workers facing not only deprivation of their hard earned rights and entitlements, but also retrenchment and lay-offs.

WTO is the most visible symbol of these processes of globalization, marketisation and recolonisation. The process is being propelled by the multinational

Corporation, constantly in search of space for expansion of their operation, seeking to transform the nations as their willing agents, totally ignoring the drastic implications on employment and survival of the vast multitude of people, creating a new culture of commoditization.

The present phase of globalization in India since 1991 has been going on in other parts of the world much longer. It is being overseen by Multinational Institutions like IMF, and World Bank. Because these institutions represent the interest of International Finance Capital, they have prescribed to all developing economics a uniform package of policies, which are not based on the specifications of these economics. Their view is clear, if an economy is facing problem it is because its structure is not suitable to the one required by the dominant world economic interest. Thus, the prescription is that the structure of the economy has to be adjusted to that required for its incorporation into the world markets. This is what the WTG is forcing on all economics and that is what the World Bank prescribes as 'Structural Adjustment Programme' (SAP) the interests of the local population of the countries undertaking SAP or implementing the WTG provisions do not matter.

Today, a large majority of Indian do not know what 'the New Economic Policies' launched in 1991 are or what does WTG stand for. They do not know that it is setting the agenda for the way they will live and work for the next fifty years or more. They do not know that WTO is changing the rules in the direction that are weighted against them. It is not just the common people who find things difficult to understand, even well educated people find hard to comprehend our legislator and policy makers are also confused. Parliamentarian failed to understand the issue. Whenever any discussion took place, these had been piecemeal.

As a matter of fact, the problem arises also because the developed countries have not reduced their aggregate measure of domestic support (AMS) and export subsidies. As reported by OECD (2001), the total support to agriculture in USA increased from \$ 41,852 in base period of 1986 - 88 to \$ 50,884 during 1998-2000. This meant about 22 percent rise. In European Union, it rose from \$ 94,640 in the base period to \$ 105,032 in 1998-2000, i.e. by 11 percent; in Japan it increased from \$ 53,354 to \$ 55,498 i.e. by 4 percent; in Korea it raised by 42 percent i.e. from USD 12,218 in the

base period to USD 17,324 during 1998-2000. In USA, it was all shown under Green Box subsidy. As against this, product specific support in India was - 3.05 billion dollar i.e. about - 34.8 of the total value of agricultural output, while non-product specific support after adjustment of support to resource poor farmers worked out to 7.5 percent in 1995-96 and only 2 to 3 percent in 1997-98.

Quite interestingly, it has also been observed that the global agricultural trade as such has suffered a set back in the wake of WTO. The volume of agricultural exports which was growing at the annual rate of 5.2 percent during the early 1990's decelerated to 3.4 percent during 1995 to 1990 (Ramesh Chand 2001)

However, the annual growth rates of India's agricultural export declined more sharply, from about 15.6 percent in the early 1990's to 5.6 percent in the post WTO period i.e. 1996-1999. Similarly, while the overall growth rate of developing countries' market access to develop countries decelerated marginally from 0.77 percent per annum in the early 1990's to 0.37 percent in the late 1990's.

In act, the small and marginal farmers and agricultural labourers who constitute the marginalized section of the rural population lose on both production and consumption fronts. Because of their low bargaining power and participation in development, they are simply net losers. Further, a recent study by Ramesh Chand (2001) shows that overall net social gains of trade liberalization have been engative for relatively under developed regions of the country.

### **Impact of Liberalization on Agricultural Workers and Women**

There is apprehension that economic liberalization, which tends to induce privatization and market-led technological change, may affect employment and income prospects of rural women adversely. For instance the impact of opening of fisheries and agro processing to multinational and corporate reportedly displaced million of workers.

The impact of economic liberalization on agricultural workers and women may be summarized as follows:

- The volatility of international prices of agricultural commodities has affected agricultural workers in India adversely. Particularly during the last few years or so, most of India's agricultural commodities have lost international competitiveness due to low international prices. The exports of agricultural commodities have fallen. Simultaneously, there have been increased imports of edible oils and raw cotton which have depressed the domestic prices of these commodities.
- It is apprehended that the process of economic liberalization will ultimately result in a situation in which multinational companies will dominate the agricultural scene in India and small farmers may lose their grips over agriculture, posing a risk of livelihood insecurity for millions of agricultural workers and rural women.

- In the wake of WTO, not only agricultural exports have declined, but also rate of growth of agricultural output and employment. Consequently, both cultivating households as well as landless particularly women labourers have suffered a loss of income.
- In the wake of economic liberalization, cultivators as well as agricultural labourers look depressed because of deterioration in their income levels as well as uncertain future. Also the gap between agricultural and nonagricultural workers is widening.
- There is a secular worsening of the condition of agricultural labourers due to increase casualization of labour force and inability of the organized farm and non-farm sectors to absorb the growing labour force.
- In the plantation sector too, the decline in the export earnings from tea, coffee and rubber and low domestic prices have affected both income and employment of women. Particularly, smaller plantations find it difficult to maintain the levels of employment and wages of the labourers.

#### **Agreement on Sanitary and phyto-Sanitary Measures (SPS)**

Though the WTO provisions lays down that the minimum five percent market access may have to be given by importing countries, the developed countries impose certain quality norms and product specification and other sanitary and phyto-sanitary regulations. The EU now insists that milking cows be fully mechanized to avoid contamination and potable water used to process milk. (Kulkarni 2001)

It also prescribes that only steel machinery and filtered air be used for processing. To adhere to these norms the Indian dairy industry may have to invest much capital in the required infrastructure, either through cooperative efforts or cooperative sector intervention. However, this may increase the cost of milk at the present yield level. Besides, this is beyond the financial capability for most of the cattle owners, as they have only one or two milking animals similar measures have been prescribed for agro-processing.

The sanitary and phyto sanitary measures in an explicit manner came into force as an integral part of the Agreement on Agriculture. The Indian exporters of foods items have faced "standard divide" in a stringent manner since the WTO's agreement of SPS measures came into force in 1995. The SPS measures are aimed to protect the human, animal or plant life or health in such manner that the scientific merit is not compromised (George 2003)

#### **Technical Barrier to Trade (TBT)**

Other specific types of provisions are Technical Barriers to Trade (TBT), which focus on ensuring, that the imported products satisfy domestic tastes, preferences and requirements with respect to quality, safety or appropriate considerations of environmental concerns during the manufacture, packaging and/or shipment of the products. The TBT agreement covers all technical regulations, voluntary standards and conformity assessment procedures. The legitimate objective of TBT includes national security

requirements and prevention of deceptive practices taking into account the risks that non-fulfillment would create. (Smita 2001)

In addition to these objectives, another potential objective of the TBT could be simple protection of domestic dairy sector and markets from foreign competitions. For instance, some countries apply different standards for a given product in different regions of the country, which complicates and confuses the efforts by exporters trying to enter their markets. Canada is certainly guilty of this with respect to its regulations regarding the colouring of margarine and its blending with buttar.

One TBT relevance for dairy products could be related to shelf life restrictions. South Korea, for example, had uniform government mandated shelf life standards, but on being questioned about their scientific basis by USA agreed to change its policies regarding shelf life in a negotiated settlement. Thus TBT can result in a net loss causing significance and unnecessary costs to the exporters.

There is a need for equivalency provisions for standards to balance the interests and rights of exporting countries with the needs and expectations of consumers of importing countries.

### **Special Safeguard Provisions (SSG)**

The infamous SSG, can limit access of Indian dairy products, provides for imposition of additional import duty of the import exceed their average during the three preceding years by no more than 5 percent. During 1995-98 the 17.5 percent of the cases in which SSG was invoked were dairy products.

The tariffication of non-tariff barriers under the WTO has forced India to bind the import of milk powder at zero duty. This was primarily because milk powder import had so far remained on the restricted list and therefore was devoid of any non-tariff barriers or what is known as quantitative restrictions (QRs). In comparison, New Zealand imposes a 12 per cent import duty and the United States and the European Union have 'bound' duties at a specific rate of \$ 865 and \$ 1,188 per tonne, respectively. The import of milk powder from Denmark into India was for instance contracted at \$1,400 per tonne, even as the US and the EU are providing a subsidy of \$ 1,028 and \$ 959 per tonne of subsidy. The import price, with the subsidy built-in, is substantially lower than the cost of production in India!

The logic behind allowing MNCs to import milk powder without countervailing duties is difficult to fathom, when their own governments are giving them massive subsidies. The Producer Subsidy Equivalent, which measures the aggregate quantum of subsidy as a percentage of the value of the milk produced, in 1997 stood at 82 per cent in Japan, 59 per cent in Canada, 54 per cent in the European Union, 47 per cent in the US and 23 per cent in Australia. Furthermore, the per tonne subsidy of \$ 811 for milk powder declared by the EU in 1998 or the \$ 875 per tonne subsidy provided by the US under its Dairy Export Incentive Programme constituted roughly 55 per cent of the prevailing international price of \$ 1,500 per tonne the same year.

## **Impact on Agro Processing and Household Industries and Erosion of Women's Livelihood**

Following few examples of Shri Mahila Udyog Lijjat Papad, Bikaneri Bhujia and oil ghanes are more than suffice to show the devastating impact of SPS, TBT and SPG in the livelihood of women.

### **Shri Mahila Griha Udyog Lijjat Papad**

There have been a number of specific grass roots movements in which women from lower middle class have been an active agent of their empowerment. For instance, the growth and significance of "Shri Mahila Griha Udyog Lijjat Papad started by only seven women in March 1959, in Girgaum", a thickly populated area in South Mumbai. These women belonged to the Lohana community, mostly of peasants origin, hailing from Gujarat. In fact, these women, were friends, purchased this venture of another woman along with its loss of Rs. 80. With the needed ingredients from their homes, they rolled out papads on the terrace of their buildings (Ramanathan 2004)

With in three months, there were about 25 women working in their group. In two years, the number rose to over 150 women. By 1962-63, the annual sales of papad rose to about Rs. 1.82 lakhs. In July 1966 this organization of Shri Mahila Udyog Lijjat Papad was registered as a society under the Societies Act. In September 1996, the Chairman of Khadi and Village Industries Commission (KVIC), Government of India personally visited this organization and granted a formal recognition. KVIC also granted a working capital of about Rs. 8 lakh and tax exemption and soon it was registered under Mumbai Trust Act 1950, as a public trust. Thus the formal organization of Shri Mahila Udyog Lijjat Papad was completed by the seventh year of its existence.

The organization aimed at promoting self-employment, dignity of labour and earning capacity of women working from home. With time, this was to be consciously developed as a discourse and ideology, based on Mahatma Gandhi's concept of trusteeship. Gandhian trusteeship was well suited to the organization, as it had evolved in due course. Under trusteeship, all assets belonged to the society and business was nothing but a refined form of service. Ownership of a business developed on those engaged in its functioning. In other words, there were to be no employee or employer.

As most of them came from the lowest economic sections of the society, this developed in them a sense of self-esteem and gave them pride in' their capacity to earn their livelihood independently. Thus, Lajjat, as it evolved, was very much more than a mere entrepreneurial venture. It was a symbol of women's strength, as it's logo proclaimed, a living example of a concept and a way of life. At its core were women helping themselves to grow beyond the confines of their home as well as of their work. This is an example of how meeting a practical need for supplementary income had a transformatory potential for the women concerned.

The pace of growth of the organization is evidenced in the opening of several branches in different parts of India. The 21st branch was inaugurated at Bhopal, Madhya Pradesh in November 1979, 50th branch at Borivalli in March 1996, 55th branch in Baroda, Gujarat in April 1997, 59th branch in Rahuri, Maharashtra in December 1998 and 61st branch in Veerayatan, Rajgir in Bihar in

December 1998. The 62nd branch opened in Jammu and Kashmir in 2001. Since 1998 the opening of new branches was slackened to concentrate on increase of production in the existing center to avoid overlapping of the territorial spread of each branch.

Apart from making papads, the organization soon started to diversify into allied or other areas of production that seems feasible as a cottage industry. The flourmills in 1975 (to grind lentils etc.), masalas (Spices) division in 1976, printing division in 1977 and polypropylene packing division in 1978. The cottage leather division (1979), the match industry division in 1979 and agarbatti (incense sticks), were started but eventually had to close down as they were neither economically viable nor self sustaining.

The Mahila Griha Udyog Lijjat Papad had thus expanded to have 32 divisions and 62 branches. The other divisions are sales, export, advertising, printing and polypropylene. The branches and other divisions spread over 15 states of India, with Mumbai itself having 17 branches. The strength of member-sisters swelled to more than 40,000 from the original. The tremendous increase in the sales proceeds in about a decade was indicative of the corresponding growth and spread of the organization. The total sales figures of the organization for the 12 month till February 1980 was Rs. 4 million, the corresponding sale for the financial year 1999 was Rs. 25.866 million including the export sale of Rs. 8.5 million.

Once well-established Lijjat attracted attention due to its unique equitable structure and rapid development. Several foreign visitors and officials thronged to see it's functioning to promote similar organization in their countries. Visitors came from far and wide from Israel, U.K., Srilanka, Sudan, Iraq and other countries. The Lijjat exports to all these and other countries had a hand in the increasing popularity of its name and products both in the east and the west.

The growth of the Lijjat Papad is to be seen in the larger canvas of women and their development within the framework of progress in India. The contribution of Lijjat in promoting economic empowerment of women has been well recognized and appreciated. The Economic Times Award for the Business women of the year was received in September 2002 by Jaswantiben Popat, the only surviving member of the seven women member founder of the Lijjat. The award was given for the women behind Lijjat Papad for unleashing the power of unity for building an enduring and respected brand showing that the ordinary women can achieve the extraordinary.

In the later half of the 20th century, women initiated movements that were economic, social, political or cultural in content. Shri Mahila Griha Udyog Lijjat Papad was a model attempt to make women economically self reliant, thus paving way for their concurrent empowerment in the other facets of their lives. It symbolized the beginning of a slow, but steady, process of women taking an active agency over their lives and that of society around them. What is significant is that Lijjat Papad provided a beacon light to the lower class women in India, irrespective of their caste, religion and region, a path towards a better future. The capacity to earn one's livelihood and the resultant self-confidence was necessary the first step in the ladder to empowerment (Ramanathan 2004)

# Women : The Food Processors



### **'Bikaneri Bhujia' Cultural and Intellectual Piracy by Pepsi?**

An example of the free usurpation of a traditional name for a cottage industry product is the recent flooding of Delhi bill boards and banners with advertisement by Pepsi for "Bikaneri Bhujia". Pepsi will now be selling bhujia under its brand name "Lehar Namkeen". A global company is thus taking control of the traditional snack food sector.

The famous bhujia of Bikaner was developed by a local halwai, when in 1877, the then ruler of Bikaner, Maharaja Dungar Singh asked him to prepare new 'namkeen' for his guests. The halwai produced hair thin bhujia, which became instantly popular. There are now 200 units manufacturing the bhujia. The moth dal, the basic ingredient, grows only in Bikaner.

A product of a local traditional innovation is now to be manufactured and marketed under the brand name of a multinational. Pepsi will be adding consumer value by providing authentic tasting products with guarantee of quality and freshness at reasonable prices, delivered at the doorsteps of the consumers. As the world's largest manufacturer of snacks, Pepsi sees an opportunity of upgrading the industry with infusion of technology and would like to see the imagery of namkeens changed from cottage sector produced commodity type product to a modern high quality product, which is in line with international standards.

"Lehar Namkeen" thus uses the imagery and technology of the Bikaner Bhujia even while undermining its cultural, technological and socio-economic base. The small cottage industry based units will thus be wiped out as their market will be monopolized by the global snack food giant. "Bhujia" will be disassociated from its cultural and ecological roots in Bikaner and in the small-scale snack food sector and will be associated with pepsi in the minds of global consumers through pepsi's massive advertising.

Already, Delhi is getting covered with billboards asking, "Sir, do you want same Bhujia?" or using popular popular film songs to say "Mere pua ghar laya" Bhikaner Bhujia and "Khata Rahe Mere Dil".

While Art (8) and 29(9) of Trade Mark with their broad scope would be able to prevent any Indian citizen from doing what Pepsi has done with Pepsi's signs, symbols and marks, Pepsi is free to pirate and distort the collective heritage of Indian society because our heritage cannot be narrowed to a "registered trade mark".

The cultural and economic implications of a multinational corporation taking over a traditional product and selling it globally under its brand name that is illustrated in the Pepsi case is at the heart of the political and economic issues of Intellectual Property Rights in general and a Trade Marks regime in particular. When new IPR regimes are introduced in a technologically and culturally plural economy of India which has not been crushed by formalization of law but governed by customary codes and moral law, we have to ensure that changes introduced into our national laws in the context of globalisation have the mechanisms for preventing piracy. This includes "biopiracy" as in the case

of Neem patents or seed patents and breeders rights and cultural piracy and intellectual piracy as in the case of Bikaner Bhujia.

Whether it is farmers right to seed or traditional halwais to produce Bikaner Bhujia whether it is our biological wealth or our rich craft tradition, the protection of the livelihoods of our people and of our cultural values and heritage should be the top most priority of any process of law making, even in the GATT era.

Since Trade Marks are an economic instrument with major cultural and political impact, it is important that a new Trade Mark Bill ensures that it protects our cultural and intellectual heritage, as well as the economic base of survival of millions of small producers especially those in the cottage industry sector.

The section on textiles is also totally inadequate in protecting the rights and markets of traditional weavers and seems to be drafted only for the industrial sector. This is particularly important given that traditional techniques and designs are now being "pirated" on a large scale by western corporations for global markets. A major case has emerged in Ghana where traditional designs woven by hand loom weavers are being imitated by U.S textile corporations, usurping the American markets from Ghanaian weavers, and undermining the existing African markets to which they currently supply goods.

Further these groups of producers have values of free sharing that need to be protected for the future of humanity as a whole. Instead of expanding the sphere of privatizing IPRs to cover seeds and traditional snack foods, it is essential, to reduce the sphere of IPRs like patents and trade marks in domains where they can infringe on the prior, even though non-formalized and non-registered rights, of farmers, healers and handicraft producers.

Protecting the rights of traditional communities has to be ensured by not allowing MNCs to have the unbounded intellectual property rights that would allow them to trample on Indian producers, traders and consumers. The traditional farmers and the halwais can best be protected by having very clearly defined limits and boundaries for corporate rights, and having very clear criteria for exclusion in patents as well as in trade marks based on ethical, cultural, ecological, economic and political imperatives.

"Bikaneri Bhujia" is a traditional snack produced in cottage industries in Bikaner, Rajasthan, India and currently providing 2,500,500 persons mainly women with a living wage. Pepsi with its capital, is now using this traditional name in its advertising, in order to underbid the local producers and therefore destroy their market. Pepsi has introduced no new technology to produce this snack. This US MNC, which can now operate freely in India after the economic liberalization, has appropriated the cultural knowledge, the traditional method of food preparation of millions of simple women, and thereby destroyed their basis of living. These women from town and country educated and uneducated, married and widowed, had an income from this cottage industry, which was perfectly suited to the region, which gave this snack its name. The moth lentil, used for preparing this snack, grows only in

the deserts of Bikaner and Jodhpur. The cottage industry had a secure local market and supported not only the women but also the farmers in this desert region, where not much else grows. A further ten thousand women are employed in the preparation of Papad, a snack that is eaten together with the Bikaneri Bhujias. And hundreds of thousands of street vendors live from the sales of these popular traditional snacks. (Maria)

At the conference on "Intellectual Property Rights, Community Rights and Biodiversity" in Delhi, it was reported that almost the entire population of Bikaner was involved in the production and distribution of Bikaneri Bhujia. Now Pepsi has announced that it will remove this product from the cottage industry sector and relocate it in the high-tech sector. This will be catastrophe for the people of Bikaner, as Pepsi has stolen the traditional trademark name in order to destroy the market of the little people.

In India, in support of these policies, farmland necessary for the feeding of the local population is now planted with export food products, such as tomatoes for ketchup from Pepsi in place of rice in the Punjab, sunflowers instead of rice and millet in Karnataka, flowers, strawberries and fruits for export in Maharashtra instead of basic food stuffs. Corn is grown for animal feed, to be exported to Europe. The large food concerns turn the farmers into contract producers who provide them with raw materials for the manufacture of "Novel Food" which they then sell where certain social classes have the necessary purchasing power.

#### **The Attack on Local Processing! The Threat to our Ghanis, Chakkis and Dhabas.**

Global agribusiness is now attempting to take over food processing by making fresh, locally produced food appear backward, and stale food clothed in aluminum and plastic appear 'modern'. Industrial processing and packaging was first applied to edible oils, destroying the livelihood of oil mill operators and small farmers because of imported soybeans. An attempt is now being made to take over the wheat economy.

The Indian wheat economy is based on decentralized, small-scale local production, processing and distribution systems. Wheat and flour (atta) provide livelihoods and nutrition to millions of farmers, traders (artis), and local mill operators (chakkiwallas). The decentralized, small-scale, household based economy of food production and food processing is huge in aggregate. It generates millions of livelihoods while ensuring that fresh and wholesome food at accessible prices is available to people. Moreover, such production and processing has no negative environmental impacts.

It is estimated that more than 3.5 million family-run kirana shops supply wheat to Indian consumers. More than 2 million small neighborhood mills produce fresh flour. In addition, flour is also produced by million of women working at the household level. The rolling pin (belan) for making 'rotis' has always been a symbol of women's power. It is often mistakenly said that only 2 percent of food is processed in India. This is because officials ignore women's work in the home and the contribution of this work to the national economy.

While 40 million tonnes of wheat is traded, only 15 million tonnes is purchased directly as atta because India loves freshness and quality in food. Less than one percent of consumed atta carries a brand name because Indian consumers trust their own supervision of quality at the local chakki better than a brand name attached to stale, packaged flour. This decentralized; small-scale economy based on millions of producers, processors and traders works with very little capital and very little infrastructure. People are the substitute for capital and infrastructure. However, such a people centered economy impedes large-scale profits for big agribusiness. They are therefore eyeing the Indian wheat economy to transform it into a source of profits.

The destruction of millions of livelihood, of local decentralized economy and of people's access to fresh and cheap atta is described as "modernization of the food chain". In the Third World packaged food is described as the food of the rich, even though the rich in the industrialized countries in fact eat fresh food, while the poor are forced to eat heavily processed and packaged food. Packaging is not "modernization", but rather an obsolete aspect of non-sustainable economy that uses packaging and brand names as a way to displace the more efficient and cheaper system through which people can get food processed locally in front of their eyes and hence ensure quality and freshness.

The Delhi government has also passed a law requiring all small dhabas and street vendors to get licenses. While economic reforms have ended the "license - permit raj" for big corporations and MNC's, globalisation is creating a new 'rule of license and corruption by dragging the small farmers, small processors into a net of a "license-permit raj". This is a system of slavery, not free trade. Free trade is what we have had the freedom to practice our trade, at the small scale, whether it is to put up a tea stall or dhaba or the roadside or a small chakki or ghani in a village and community.

Agriculture is the basis of our survival, our culture, and our moral fabric. Destruction of Indian agriculture by import dumping and take over of Indian agriculture by MNCs through WTO trade rules and World Bank/IMF policies of economic reform is not just the destruction of the livelihoods of 750 million Indians who are farmers. It is an assault on our freedom and democracy; it is an invasion into our culture and civilization, it is a threat to our environment and food security, it is a recipe for a new slavery, in which the farmers and the country are enslaved to American MNCs, the American government and the World Bank, IMF and WTO.

A new freedom movement for India has to be based on a movement for farmer's freedom. We have to keep our food and agriculture free of MNC control and WTO control. Unless our food and agriculture is based on policies that defend nation and sovereignty and farmer's sovereignty, we all once again be colonized and enslaved.

### **Agreement on Agriculture (AoA)**

Worst of all, agriculture, the last bastion of the national economy is facing unprecedented threat with the removal of all quantitative restriction (QR) on imports of agricultural products, on the one hand and impending corporatisation of this sector, on the other. The damage has been compounded

because of the complementary economic, financial and fiscal policies being followed by the government and advice of IMF and World Bank. Farmers have been left to the mercy of the traders and profiteers. They are being dispossessed of their land through auctions to recover the dues. Public Distribution System has been decimated in the name of 'targeting' subsidies and fiscal discipline.

Following the WTO Treaty, India has liberalized its agricultural trade policy by removing all quantitative restrictions on imports of agricultural commodities and export of major commodities. There has been tariffication of erstwhile non-tariff items and WTO compatible tariff rates prevail.

At the time of signing the AOA in 1994, it was hoped that Indian farmers would gain substantially from trade liberalization, as our farmers would gain international market access for their products. This was mainly because international price at the point of time were much higher than domestic prices of most agricultural commodities. However, in the wake of WTO, India's exports of almost all agricultural commodities have shown a declining trend. Due to low tariff, imports of edible oils particularly palm oil have surged which have depressed the domestic prices of edible oils and oilseeds. As a result, Indian farmers have suffered a great deal. Also the country imports edible oils to the tune of 46 lakh tonnes and spends huge foreign exchange.

There is no level playing field created through AOA or WTO led trade liberalization and therefore, where is the question of small and marginal farmers in India benefiting from such unequal open trade regime. In other words/the existing AOA is heavily biased in favour of developed countries. Besides, even if Indian farmers are led to freely decide what they should produce or should not produce, for domestic and international markets, based on comparison with world market prices of the principle of comparative advantage, they will not gain much mileage because of two reasons. First, the world market for agricultural commodities lack objectivity, as these are largely controlled by a few oligopolists and multinational companies who account for agreements among them and consequently, free trade will remain a myth.

Second, small and marginal farmers in India lack adequate access to marketing facilities even within the country due to lack of access to basic infrastructure like market yards, within a reasonable distance, roads and transportation, storage, cool chains etc. and therefore, depend heavily on unscrupulous middleman. In other words, benefits of trade (if any), whether nationally or internationally, would be cornered. Moreover, in a country like India where there is huge population, Indian farmers can substantially benefit from domestic market alone, provided there is sufficient improvement in purchasing power of the people and necessary marketing infrastructure. In fact, enabling the small farmers to benefit from development of domestic market would be a necessary pre-condition for their gainful access to international markets.

As the same time, it is apprehended that the process of economic liberalization will ultimately yield a situation in which multinational companies will dominate the agricultural scene in India and small farmers may lose their grips over agriculture, posing a risk of livelihood insecurity for millions of people. (Reddy, 1997) Also trips and bio-piracy are likely to affect the Indian farmers adversely.

Already several traditional Indian products like kalajjira, karela, brinjal and anar are reported to have been patented in foreign countries, although India has won cases for Basmati and Neem. In addition, the monopolistic/oligopolistic seed production by multinational companies would tend to raise input prices, thus rising the farmer's cost of production.

WTO's agreement on Agriculture had incorporated three broad areas of commitments from member states, namely in market access, domestic support and export subsidies. Increased market access was the hallmark of the free trade, aimed at opening new markets for agriculture exporters. There has, however been hardly any change in the volume of exports. High imports duties continue to block exports from the developing countries have also blocked the exports from developing countries. And on top of it, only 36 countries (all developed) have the right to impose special safeguard provision if agriculture imports distort their domestic market. The underlying objective being to correct and prevent restrictions and distortions in world agricultural markets. On the other hand, the trading regime has ensured that developing countries take time-bound initiatives to open up their domestic markets for cheap and highly subsidized imports of agricultural commodities in the name of encouraging competition. Nine years later, it is now established that these measures have only protected the farmers and the farming systems of the developed countries.

It is now official, nine years after the WTO came into existence, on January 1, 1995; the anticipated gains for India from the trade liberalization process in agriculture are practically zero. The Ministries of Agriculture and Commerce have officially admitted that the hopes from an international regime that talked of establishing a fair and market oriented agricultural trading system have been belied.

### **Market Access**

Increased market access was the hallmark of the free trade agenda. It was aimed at force opening new markets for agriculture exporters. The AoA required all countries to allow a certain minimum market access for every agricultural product at 5 percent for developed countries and 4 percent for developing countries. Southern nations, with low cost of production, were always told that with the developed countries would have to open up their markets for cheaper food imports as a result of which the developing countries would gain enormously.

India was forced to either phase out or eliminate the quantitative restrictions (QRs) on agricultural commodities and products latest by April 1, 2001. India has, therefore, opened its market and, in turn, made the farming community vulnerable to the imports of highly subsidized products. Already, cheaper imports of skimmed milk powder, edible oils, sugar, tea, are canut, apples, coconut etc. have flooded the market.

### **Domestic Support**

Clever manipulation of their subsidy-reduction commitments has in reality increased the support to farmers in the developed countries. In the US, subsidy to mere 9,00,000 farmers has increased by

700 times since 1996. Two years before the former US President, Mr. Bill Clinton, left the office, the US had provided an additional \$ 26 billion to its farmers. In absolute terms, farm support in the OECD countries increased 8 percent to reach a staggering \$ 363 billion in 1998.

In the European Union (EU), direct payments to farmers after the reforms initiated in March 1999 to the Common Agricultural Policy, now account for 126 percent of the net income of cereal producers and 129 percent for the bovine meat producers. And this falls under the Blue Box. Explicit and implicit support to farmers is, therefore, protected under the various colours of the protection boxes: Green Box, Amber Box and Blue Box.

In India, we are being told that our Aggregate Measure of Support (AMS), a measure of the subsidies that are provided to agriculture, being negative (against the upper limit of ten percent) we can still raise our subsidies to farmers. In reality, India is committed to do away with agricultural subsidies under the Structural Adjustment Programme of the World Bank and the IMF. In any case, India provides only \$ 1 billion worth of indirect subsidies to 550 million farmers.

It was anticipated that due to reduction in domestic support in the developed countries, cereal production would shift from the developed to the developing countries. Empirical evidence, however, is that such a trend is not at all visible. In fact, all indications (and efforts of the World Bank/IMF) point towards making the developed countries the hub of cereal production. The Bretton Woods institutions have been asking developing countries to diversify to cash crops as a pre-condition for advancing loans. Moreover, with such massive subsidies intact, and with the Ors lifted, developing countries are sure to be inundated with food imports, a process that has already initiated further marginalisation of farming and farm communities.

### **Export Subsidies**

The WTO enables only 25 countries to provide export subsidies for their agricultural products and commodities. Other countries, which do not have agricultural export subsidies, like India, cannot make any new provisions for it. Export subsidies that need to be pruned, as per a formula, are not provided in India. On the other hand, the US continues to find legitimacy for even export credits, which are actually used to promote and push American agricultural exports.

The Ministry of Agriculture acknowledges that despite the rules being defined, the expected gains have eluded the developing countries. It was expected that with the removal of trade distorting measures, agricultural exports from the developing countries would increase. This did not happen. In fact, India has on the other hand seen a massive increase in the imports of agricultural commodities and products from Rs. 5,000 crore in 1995 to over Rs. 15,000 crore in 1999-2000, a three-fold increase.

In edible oils alone, the import bill has soared to Rs. 9,000 crore. The so-called fair trading system has also not helped efficient producers in realizing a higher price for their products. On the contrary, prices of most agricultural commodities are declining in world market.

## **Agreement On Agriculture: A Kargil Treaty**

The Agreement on Agriculture should be called a Kargil Agreement. Converting self-sufficient food dependent economies is the Kargil vision and the W.T.O strategy. Because the Agriculture Agreement of W.T.O. is an agribusiness treaty it distorts production and trade from the perspective of nature, small farmers and all consumers, especially the poor. It is a recipe for ecological destruction, devastation of family farms, and rumination of citizen's health. Behind the apparent neutrality of rules for "domestic support", "market access" and "export competition" are distorted assumptions and myths about food production and distribution (Vandana Shiva 2003)

These Kargil myths are enshrined in the W.T, O. agriculture agreements. The first myth is that America is the best region for growing food and America grows the best food. The reality is that America is a model of how not to grow and produce food. The second myth is that free trade allows food to be delivered "efficiently". The reality is that without massive subsidies and dumping, U.S. corporations could not capture South markets, and "free trade" is based on a "food swap", with countries importing and exporting the same commodity and all countries pushed into trade in a handful of commodities controlled by the agribusiness giants-not on exporting what a country can uniquely produce and importing what it cannot.

The related myth is that dumping "frees" up incomes of farmers who can then buy "motorbikes, cellular phones and computers". The reality is that dumping destroys domestic markets, collapse of markets destroys livelihoods and incomes, collapse of rural incomes erodes purchasing power and entitlements. Impoverished farmers join the ranks of the hungry. Indebted farmers commit suicide. Starvation deaths and farm suicides are the tragic outcome of trade liberalization of food systems.

While displacing farmers has been justified on grounds of productivity in fact small farms are more productive than large ones. As our former Prime Minister Ch. Charan Singh had stated,

*"Agriculture being a life process, in actual practise, under given conditions, yields per acre decline as the size of farm increase (in other words, as the application of human labour and supervision per acre decreases). The above results are well nigh universal: output per acre of investment is higher on small farmers than on large farms. Thus, if a crowded, capital-scare country like India has a choice between a single 100 acre farm and forty 2.5 acre farms, the capital cost to the national economy will be less if the country chooses the small farms "*

However, it is the small farms and small farmers who are being destroyed by globalization and trade driven economic reforms. Five million peasants livelihoods have disappeared in India since "reforms" were introduced.

## **Change in Agricultural Production and erosion of Agricultural Livelihood.**

There are two levels at which the matter of food self-sufficiency, based on the green revolution in India, is a myth. At the micro level, the displacement of crop mixtures of cereals, pulses and oilseeds

by monocultures of commoditised HYV crops undermines food self-sufficiency in a drastic way. First, the small peasant, who does not fit into the credit, purchased inputs and cash crop package, is displaced, losing his or her entitlement to food that food production provided. There is ample evidence available that the green revolution' had a class bias and worked against the interests of the small peasant. The dispossession of the poorer sections of rural society through the green revolution strategy and their reduced access to food resources is, in part, responsible for the appearance of surpluses at the macro-level. The surplus, according to prominent economist V.K.R.V. Rao, is a myth because it is created by lack of purchasing power.

The green revolution has displaced not just seed varieties but entire crops in the Third World. Just as people's seeds were declared 'primitive' and 'inferior' by the green revolution ideology, food crops were declared 'marginal', 'inferior' and 'coarse grained'. Only a biased agricultural science rooted in capitalist patriarchy could declare nutritious crops like ragi and jowar 'inferior'. Peasant women know the nutrition needs of their families and the nutritive content of the crops they grow. Among food crops they prefer those with maximum nutrition to those with a value in the market. What have usually been called marginal crops or coarse grains are nature's most productive crops in terms of nutrition.

That is why women in Garhwal continue to cultivate mandua and women in Karnataka cultivate ragi inspite of all attempts by state policy to shift to cash crops and commercial food grains, to which all financial incentives of agricultural 'development' are tied. Table 3.1 illustrates how what the green revolution has declared inferior grains are actually superior in nutritive content to the so-called 'superior' grains, rice and wheat. A woman in Himalayan village once told "without our mandua and jbangora we could not labour as we do. These grains are our source of health and strength. (Shiva 1992)

**Table - 1.3 (1) : Nutritional content of different food crops**

|                | <b>Protein<br/>(Gms)</b> | <b>Minerals<br/>(100 gms)</b> | <b>Ca<br/>(mg)</b> | <b>Fe<br/>(100 gms)</b> |
|----------------|--------------------------|-------------------------------|--------------------|-------------------------|
| Bajira         | 11.6                     | 2.3                           | 42                 | 5.0                     |
| Ragi           | 7.3                      | 2.7                           | 344                | 6.4                     |
| Jowar          | 10.4                     | 1.6                           | 25                 | 5.8                     |
| Wheat (milled) | 11.8                     | 0.6                           | 23                 | 2.5                     |
| Rice (milled)  | 6.8                      | 0.6                           | 10                 | 3.1                     |

(Shiva 1992)

The most extreme example of this polarized vision is that of bathua, an important green leafy vegetable with very high nutritive value, which grows as an associate of wheat. When women weed the wheat field they do not merely contribute to the productivity of wheat; they actually harvest a rich source of nutrition for their families. However, with intensive chemical fertilizer use bathua becomes

a major competitor of wheat and has been declared a 'weed' that is killed with herbicides and weedicides. The food cycle is broken, women are deprived of work, and children are deprived of a free source of nutrition. The crops that the green revolution destroys are thus not marginal in the context of nutrition and survival, but in the context of the market and of commodity production of food for profit. The bias against people's seeds and peoples crops translates into a bias against women's work in the production of sustenance.

Since diversity works against the logic of centralization and control, genetic diversity must be destroyed in effect; global agricultural strategies are breeding out those links in the food chain, which are of high value of women's work in the survival economy and which have traditionally been under their control. The green revolution in Punjab reduced food values by displacing the traditional cereal pulse oilseed mixed cropping patterns and reducing the production of pulses and oilseeds. The rapid spread of HYV rice and wheat took place at the cost of pulses and oilseeds. (Shiva 1992)

Women in India are an intimate part of nature, both in imagination and in practice. At one level nature is symbolized as the embodiment of the feminine principle, and at another, she is nurtured by the feminine to produce life and provide sustenance. With the violation of nature is linked the violation and marginalisation of women, especially in the Third World. Women produce and reproduce life not merely biologically, but also through their social role in providing sustenance.

Women were the world's original food producers, and continue to be central to food production system in the Third World in terms of the work they do in the food chain. The worldwide destruction of the feminine knowledge of agriculture evolved over four to five thousand years, by a handful of white male scientists in less than two decades has not merely violated women as experts; since their expertise in agriculture has been related to modeling agriculture on nature's methods of renewability, its destruction has gone hand in hand with the eco logical destruction of nature's processes and the economic destruction of the poorer people in rural areas (Shiva 1992)

Contrary to received views that modernization would liberate women from old discrimination and domination, the modernization of agriculture in India is deepening old prejudices and introducing new biases and violence. The assumption of the substitutability and dispensability of nature and women that results from the dichotomies and dualisms of economic and scientific reductionism is the underlying cause for the desertification and death of soils on the one hand and the deprivation, devaluation and death of women on the other (Shiva 1992)

### **Trade Related Intellectual Property Rights (TRIPs)**

The Trade Related Intellectual Property Rights Agreement (TRIPS) of WTO is, the aspect of globalization, which can be the biggest threat to people's food security when combined with the opening up of the seed industry. The section of TRIPS that most directly affects farmer's rights and agricultural biodiversity is Article 27.5.3(b), which states. (Vandana Shiva and Anjali 2002).

"Parties may exclude from patentability plants and animals other than microorganisms, and essentially biological processes for the production of plants or animals other than non-biological and micro-biological processes. However, parties shall provide for the protection of plant varieties either by patents or by an effective sui generis system or by any combination thereof. This provision shall be reviewed four years after the entry into force of the Agreement establishing the WTO."

The article thus allows two forms of IPRs in plants; patents' and a sui generis system. The Patent Act and the National Plant Variety Legislation drafts are becoming a major location of contest between the public interest and corporate interest.

The 1970 Patent Act excluded all methods of agriculture and horticulture from patentability. In addition, the exclusion of product patents in the area of agrochemicals was also ensured through Section 5a. The Patent (Amendment) Bill 1995 removes these restrictions in the field of agriculture. Further, since it does not articulate new demarcation criteria for exclusions, it allows the patenting of plants, plant products, plant characteristics, their genes, biopesticides, biofertilisers, etc. The totally unrestricted scope of patenting in agriculture that this Bill proposed would have undermined Indian agriculture, threatened Indian farmers, and imperiled food security. It failed to pass through Parliament due to these serious implications.

The TRIPs agreements militate against people's human right to food and health by conferring unrestricted monopoly rights to corporations in the vital sectors of health and agriculture. It also threatens the livelihood of farmers. The case of the Basmati Patents is a good illustration of how Intellectual Property Rights (IPRS) claimed by corporations undermines farmer's rights.

Basmati is a rice variety evolved over centuries of breeding by Indian farmers. The US company Rice Tec has Patent No. 56, 63, 484 for Basmati 867 which is essentially derived from Indian Basmati, but which Rice Tec claims is an 'instant invention' of 'novel rice lines'.

The patent claim thus denies farmers breeding and innovation, and by appropriating the contribution of farmers, declares 'biopiracy' as an 'invention'. Over time, Rice Tec can use the patent to prevent Indian farmers from growing basmati or force them to pay royalties since a patent allows the patent holder to exclude others from making or using the product covered by a patent. In the short run, Rice Tec can use Biopiracy to undermine India's markets of Basmati exports of 4,00,000-5,00,000 tons valued at Rs.11.2 billion which commands three-fourth of the total rice exports.

Intellectual Property Rights in the area of agriculture and plant variety will undermine food security since the protected and patented varieties are not linked to food needs, but to the processing and marketing requirements of agribusiness. The shift to the control of agriculture through the control of seed will also contribute to secondary impacts on other natural resources like land and water passing into the control of TNCs. IPRs in the area of seeds and plants will increase the national debt tenfold.

Article 27.5.3 (b) of the TRIPs agreement is based on allowing the patenting of life forms by discriminating between 'biological' and 'non-biological' forms. Since such discrimination already exists, the Agreement in Agriculture should be reviewed on the basis of discrimination between the small family farm and the large corporate farm, and discrimination between ecological/organic agriculture and chemical/genetically engineered agriculture. US industry tried to preempt such discrimination, which is necessary for food security by insisting that genetic engineering be labeled organic.

However, without protecting the earth, biodiversity and the small-farmer, no food security is possible. Hence the right to life and the right to food security, require that the WTO agreement be changed to provide protection to small producers and to the environment. Trade policy needs to be guided by human rights and by environmental concerns. The human rights of farmers and poor consumers cannot be sacrificed merely for the increased profits of global commerce. Discrimination between sustainable and non-sustainable systems, between just and unjust systems, between ethical and unethical farming is necessary to ensure future survival.

The myth that has supported globalization is that it will lead to growth. But what is never specified is growth of what and for whom. Trade liberalization does lead to growth of profits for global agribusiness corporations. But it is leading to a decline in food production and food security, and the erosion of ecological security and economic security for farmers.

Globalization of agriculture can neither provide food security nor sustainability. Sustainability of agriculture and the right to food requires an alternative to the external intensification and external liberalization of agriculture. Internal intensification creates conditions for internal liberalization.

The green revolution model, and now the globalization model of agriculture are based on the destruction of diversity, uprooting of small peasants through indebtedness, chemical intensification, capital intensification, centralisation and long distance transport. They are based on the intensification of external inputs, and integration with global markets.

The alternative to both the green revolution and globalization is the biodiversity intensification of farming, which can only be done on small farms. Biodiversity intensification leads to internal intensification and internal integration of farms with diverse local markets. This is the real liberalization of agriculture since it frees the earth from the violence of agrochemicals, it frees diverse species from the assault of poisons and toxins, it frees the farmer of bondage through debt and royalties, it frees the Indian consumer from having to compete with global agribusiness to get access and entitlement to food. For both sustainability and justice, the alternative, based on internal intensification and internal liberalization is essential.

Under GATT Article VI, a government that was found to be injured by the dumping of overly cheap goods can offset the economic damage by charging countervailing duties on them at the border. But anti-dumping duties on agricultural products have never been assessed in part, because the Protocol for Provisional Acceptance permitted countries to continue pre-GATT policies and in part,

because the governments often benefited from the opportunity to distribute cheap foods, while the actually injured parties were peasants with little political clout. The GATT's provisions for anti-dumping have been widely applied in disputes over trade in industrial goods.

### **Patents on Seeds, Biopiracy, and Seed Monopolies**

Seed Security is the foundation of food security. Through their operations the multinational corporations (MNCs) usurp from sovereign nation states, the power of seed production, distribution and supply. Sovereignty implies self-governance, having freedom of choice and autonomy of decision-making. Freedom struggle against colonial was fought for sovereignty. Today, the same is threatened by neocolonialism, which manifests it self in the growing influence of a handful MNC and governments that harbour them. More than 60 crores Indians are dependent either directly or indirectly on agriculture, which contribute Rs. 4.18 lac crores to the GDP. Quality seed is the foundation for Indian agriculture and therefore can better the lives of 60 crores Indians. In the words of Dr. M.V. Rao, one of the eminent scientists behind the green revolution in India, "The agriculture of any country will be as strong as its seeds programme. If the seed programmes are weak, the agriculture is weak and if the agriculture is weak, the nation is weak (Rao, 2004).

By being able to control that grows and eats what and in how much quantity, it finally means being in charge of people's lives and livelihoods. From the sowing to the harvesting if an MNC is under protection from national and international law and policy, then the sovereignty of people's agriculture is severely at risk.

For instance, if a seed company is able to ensure that there is no other way that a farmer can re-sow a particular crop but by repeatedly procuring the seed from them, the farmer is made dependant on the company. Traditionally a farmer would have been to generate the seeds for the next crops from the produce of the present one. The customary rights of farmers to save, use, exchange and sell seed and other planting material are the foundation of agriculture. It also enables them to continue the development and transfer of their biodiversity and indigenous knowledge and practices.

The current intellectual property system allows MNCs to have exclusive rights over the planting material so that they control it. This has disastrous implications for farmers since for the first time in history they are losing control of the foundation of their livelihood the "seed". Keeping seed free is critical to guaranteeing food sovereignty.

The simple act of seed saving has been accepted as a natural gift of the farmers. In the present situation, this and several other farmers' rights are threatened. For food sovereignty to be guaranteed, seed and agriculture has to be under local control of those who have made it possible in the first place. This requires governments to facilitate farmer-centered and people's agriculture, genetic engineered seeds reduce biodiversity and negate local and national control over food productions.

It is essential that communities maintain sovereignty over their own systems of food production, distribution and supply. In most local communities food security depends primarily on the knowledge

and activities of women. The mechanization of agriculture and emphasis on cash crops marginalize women and irreversibly erodes the knowledge, control and hence autonomy of traditional livelihood system. (Bhutani, 2004)

A strong local management and a large biodiversity base provide the best insurance for both food security and political stability. Agro-biodiversity can only be assured if the people's vast and varied traditional knowledge base is guaranteed an enabling environment to survive and thrive. It is critical that agricultural policy objectives, such as food sovereignty and seeds are put first and trade rules subject to them and not vice-versa.

Seeds are the most important component of agriculture productivity and a striking symbol of agricultural research as it contains embodied technology. In India, both private and public sector plays commendable role in seed production and its distribution. But the composition of the private and public sector differs widely with the private sector mainly concentrating on the high value seed like vegetables whereas the public sector mainly concentrates on the production of high volume, low value seeds like cereals.

In India, National Seed Corporation (NSC) established in 1963 had played a prominent role in green revolution by engaging on production and distribution of seeds. (Suresh and Chand 2004) The Indian Seed Industry besides providing the quality seeds to the farmers at the affordable prices has been responsible for employment generation in rural sector and the growing rural economy. In crops like cotton, maize, sunflower etc, where the hybrids are popular, the employment generation is estimated to be above 800-870 lacs man days per annum. The magnitude of the employment potential that 100 in the rural area, which have less employment potential than urban areas, underlines the significant contribution of the seed industry in our country. (Rao, 2004)

At present, farmers' use saved seeds of a particular variety for growing subsequent crops either on his own land or on leased land or by traditional exchange of seeds in the village community. Once he converts into commercial seed sector, he is not permitted to sell the seeds of protected varieties without prior permission and he can be booked for breaching the IPR norms in that case. The market size of public sector in seed industry increased in absolute terms during the period of 1994-95 to 1998-99, the share of public sector declined from 40 percent to 25 percent during the same period. Similarly, the share of unorganized private sector has increased to 60 percent from 35 percent. The seed market in India has seen an upsurge. From Rs. 2000 crores in the year 2000, it is estimated to touch Rs. 6000 crores by the end of the year 2005 (Deccan Herald). At present, out of the estimated Rs. 4000 crores turnover in the seed industry, about Rs. 3000 crores is supposed to be from the private sector.

It is reported that 92 percent of wheat farmers are using home grown seed for the next season's crop. This is a high as 93 percent for groundnut and 76 percent for rapeseed mustard. The role of private sector in the Indian seed industry is on the increase. The composition of Indian seed has reached a ratio of 60:40 between private and public sector.

As a result of globalization, the Indian seed industry has to face the competition from the large global companies. As the indigenous seed industry operates with low profile margin and largely depends on technological support of the Indian public sector, the competition becomes one sided and unequal.

The large multinationals from the developed countries are in advantage position, vis-à-vis the indigenous companies due to their

1. Very large financial resources and low interest funds
2. Trained manpower to operate in Biotech regime
3. Capacity to invest in biotechnology research.

Under such a situation, the indigenous seed industry might collapse in future unless an initiative in the form of technology mission on quality seed to support technically and financially and through a policy is launched by the government. The collapse of indigenous seed industry will have a very adverse impact on Indian agriculture and farmers.

Some of the ramifications of the collapse of indigenous seed industry are:

- Farmers will have to depend on a few large seed companies for their exclusive technology for basic and vital input like seed, leading to consequences like shortages, high prices, loss of biodiversity.
- The seed prices will go up because of reduced competition
- Cultivation of few hybrids or varieties in a crop across the country could result in pest and disease epidemics. This will reduce biodiversity.
- Closure of small and medium sized companies.
- Native R & D may slowly vanish.
- The present level of rural employment due to hybrid seed production may get reduced.

There is a threat that a few large seed companies with technological edge monopolize the Indian seed market. Looking at such a bleak prospects, some of the leading Indian seed companies may choose to sell their business at the lucrative prices that may be offered to them by MNCs.

In a state like Haryana, the structural composition of the seed sector has witnessed significant changes since the formation of WTO in the year 1995-1996. The contribution of Government and Cooperative Sector in the total cereals certified seed in Haryana state were 77 % and 5.62 % respectively, in the year 1990-1991, and both the sector maintained their consistent contribution up to 1995-1996. But their share in the total cereals certified diminished rapidly after the establishment of WTO in 1995-1996 and reached nearly 34.62 % and 4.18% respectively in the year 1999-2000, the contribution of private sector in the total cereals certified seed was 17.07 % in the year 1990-1991, but its contribution in total cereals certified increased rapidly after the establishment of WTO and reached up to 61.20% in the year 1999-2000 (Kumar, Chand 2002).

This reflects that Indian seed industry is rapidly moving into a phase of "Corporate Control" over seeds after the establishment of WTO. Developments in seed sector proceed either through multinational companies setting up their branches or through collaboration between multinationals and private seed companies. Under the latter scenario, the Western collaborator provides technological expertise and investment, while the private counterpart provides the Indian Germplasm and a marketing base (Kumar, Chand 2002)

A debate has also begun on the implications of the International Treaty on Plant Genetic Resources on Food and Agriculture (ITPGRFA), which comes into effect from Jun 29, 2004. ITPGRFA is a binding agreement that gives legal force to the conservation and sustainable use of 64 food crops from 35 genres and 29 forges.

But the Treaty has an ambiguity in Article 12.3.d, which is being interpreted by countries allowing changes to IPRs on changes made to the genetic resources held in the multi-lateral system (MLS). This would mean patenting of seeds and restricting farmers' access and defeating the basic purpose of the Treaty. The controversial clause reads as follows: "Recipients shall, not claim any intellectual or other rights that limit the facilitated access to the plant genetic resources for food or agriculture or their genetic parts or components from MLS.

There is a fear that unless the ambiguity is removed in the Treaty, there will be a lightening of the IPR regime. The governing body of the Treaty should ensure that both seeds and the genetic resources they contain could not be subjected to IPRs. The governing council should also ensure that legislation to recognize farmers' rights is implemented fully in all the countries that have ratified the Treaty. There is a necessity for the implementation of the Leipzig Global Plan of Action with its ten priority activities negotiated by one hundred and sixty governments in the year 1996 to conservation of crop varieties on farm and the development of the Global Diversity Trust (GDT)

India has enacted the Plant Varieties Protection and Farmers' Rights (PVP&FR) Act and the Biological Diversity (BO) Act well in advance of the implementation of ITPGRFA. But there are also chances of India modifying its PVP&FR and BD Act with a view to joining the UPW Convention of 1991. The UPW-1991 does not recognize farmers' rights to save seeds for the next crops. If India joins UPW, 1991 it will sacrifice the interest of the farmers.

Dr. Asheesh Tayal of Green Peace hopes that Treaty should end Biopiracy. There have been several instances of Biopiracy. One recent incident is of Monsanto taking patent on Indian Wheat, which has been challenged by RFSTE in the Supreme Court.

However, according to Mr. Bhagirath Choudhary of the Federation of Indian Chambers of Commerce and Industry (FICCI) "the Treaty will provide exclusive legal rights to private companies to charge patent royalties on patented varieties drawn from traditional novel varieties of developing countries. The export market for important varieties or products made from medicinal plants can be affected by patents owned in foreign countries. Domestic market could be flooded with patented agricultural

products. The collaborative R&D projects on plant varieties will diminish. Access to and transfer of new technologies and improved varieties would be restricted. Innovative and creative processes of indigenous and local communities can be eroded. IPR laws can provide a disincentive to public and private sector scientists. Overall, the Treaty may increase the threat to diversity of genetic resources and escalate Biopiracy. (Sharma, 2004)

International organization that work to eliminate poverty in developing countries, say that the Treaty should outlaw patents on the sixty four major food crops and forages that are listed in the Treaty. But the clause, which bans patents, is open to interpretation. It is important that the governing body should close these loopholes (Vackayil, 2004)

The agriculture biodiversity and its components genetic resources for food and agriculture have been developed by the indigenous people, tribal and forest dwellers, men and women, and farmers over the last 12000 years through the free exchange of genetic resources across the globe. The scientists would need genetic diversity in agriculture to face unpredictable environmental and climatic changes. In order to select solutions to these, there should be genetic diversity.

However, attempts are being made to commercialize them for reopening excessive profits by patenting them for exclusive exploitation. Indian Basmati rice, neem, turmeric etc are the victims of such global patenting manipulation. Similarly, the integrity of many of these plant varieties is being compromised by genetically modified organisms. These developments in the field of plant biotechnology are alienating farmers and ethnic breeding from their own resources (Vackayil, 2004)

High yield varieties (HYVs), or green revolution seeds are misnamed because the term implies that the seeds are high yielding in and of themselves. The distinguishing feature of these seeds, however, is that they are actually, high response varieties. Though these seeds can be saved by farmers, they are nonsustainable due to vulnerability to diseases and pests and therefore need to be replaced after one or two crops.

Hybrid seeds are the first generation seeds (F1) produced from crossing two genetically dissimilar parent species. The progeny of these seeds cannot economically be saved or replanted, as the next generations will give much lower yields.

The hybrid seeds are also called "Sarkari" seeds as these seeds have initially been developed and distributed by the public sector in India.

Today there are three kinds of producers of seed:

- a) Farmers Seeds : the farmer has historically been the producer of perennial varieties, which could reproduce themselves eternally.
- b) Public Sector Seeds : Public sector research institutions have bred short term varieties for "high yield". These seeds could for sometime be saved and used by the farmer, but their yield reduces after a few years.

- c) **Private Sector Seeds:** Private companies and transnational corporations produce non-renewable and therefore non-sustainable seeds through hybrids and tissue culture, where the farmer has to return to the company for fresh seed, each time he has to sow.

The last is called biological patenting of seed. Patents give the owner of the seed the exclusive right to multiply, save, develop further varieties and sell seeds. Biological patenting effectively prevents the farmer from multiplying saving and selling seed.

The biotechnology revolution, which spurs the shifts in India's seed policy, differs from the Green Revolution, in terms of corporate control and the control of bioregions. The biotechnology revolution is predominantly private in character. The Green Revolution was spearheaded by the international agricultural research centers like CIMMYT and IRRI organized by the Consultative Group on International Agricultural Research, which is controlled by governments, private foundations, agribusiness corporations and multinational development banks. The private corporate interests such as agrochemical and agribusiness transnational thus functioned through the programme set by public or quasi-public institutions, which they could influence and from whose agricultural strategies they stood to gain. (Vandana Shiva)

With the biotechnology revolution, the private corporate multinational interest has become the spearheading sector of agricultural policy. The Pepsico Project and the new seed policy signal, this new trend in which the technologies are not transferred from CIMMYT or IRRI to ICAR or PAU and on the farm. This time, transnational corporate capital will go directly with the latest technology to the remotest farm. Private interests of profits will thus be the dominant driving force in the bio-revolution, increasing the control of multinationals, decreasing the role of governments and citizens of the Third World.

**Table - 1.3 (2) : Comparing the Revolutions**

| <b>Green Revolution</b>  | <b>Gene Revolution</b>  |
|--|---|
| <b>Summary</b>   |   |
| — Based in public sector   | — Based in private sector   |
| — Humanitarian intent  | — Profit motive   |
| — Centralised R & D  | — Centralised R ft 0  |
| — Focus of yield   | — Focus on inputs/processing  |
| — Relatively graduate  | — Relatively immediate  |
| — Emphasis on major cereals  | — Affects all species   |
| <b>Objective</b>   |   |
| — To feed the hungry and cool Third World political tension<br>By increasing food yields<br>With fertilizers and seeds | — To contribute to profit by increasing input and / or processor efficiencies |

### For whom

- The poor
- The shareholder. and management

### By whom

- CGIAR has 830 scientists working in 8 institutes reporting to US foundations
- In the USA alone, 1,127 scientists working for 30 bio-tech companies.
- Industrialised countries
- Quasi - UN bodies

### How

- Plant breeding in wheat, maize, rice
- Genetic manipulation of all plants, all animals, microorganisms.

### Primary Targets

- Semi-dwarf capacity in
- Response to fertilizes
- Herbicide tolerance
- Natural substitution
- Factory production

### Investment

- \$108 million for agricultural R & D through CGIAR
- Agbiotech R & D investment \$144 million in USA System (1988) by 30 Companies

### General Impact

- Substantial but gradual
- 52.9% of Third World wheat and rice in HYV'S (123 million hectares)
- 500 million would not otherwise be fed
- Enormous, sometimes immediate
- \$20 billion in medicinal and flavour /fragrance crops at risk
- Multi-billion dollar beverage, confectionery, sugar and vegetable oils trade could be lost

### Impact on Farmers

- Access to seeds and inputs Uneven
- Small farmers lose land to larger farmers
- New varieties improve yield but increase risk
- Reduced prices
- Increased production costs.
- Loss of some crops to factory farms
- Input/processing efficiencies increase farmer risk
- Overproduction and materials diversification

### **Impact on Farmers**

- Soil erosion due to heavy use of crop chemicals
- Genetic erosion due to replacement of traditional varieties
- Species loss due to overplanting of traditional crops with maize, wheat or rice
- Pressure on water resource due to irrigation
- Continuation and possible acceleration of Green Revolution effects plus
- Release of potentially uncontrollable new organisms into the environment.
- Genetic erosion of animals and microorganisms
- Biological warfare on economically important crops

### **Impact on consumption**

- Decline in use of high value foods for poor people
- Export of food out of region biological toxins
- Emphasis on feeding the rich 'Yuppie' market
- Increased use of chemical and

### **Economic Implications**

- Direct contribution of \$10 billion per annum to Third World food production
- Indirect contribution of \$50-60 billion
- Gene flow to US alone contribute to farms sales of \$2 billion per annum for wheat, rice and maize.
- Contribution to seed production of \$12.1 billion per annum by year 2000
- Contribution to agriculture of \$50 billion per annum by year 2000
- Absorb benefit of gene flow from the Third World

### **Potitical Implications**

- National breeding programme curtailed
- Third World agriculture westernized
- Germplasm benefits usurped
- Dependency
- CGIAR system subverted to corporate interests.
- Genetic raw materials and technologies controlled by genetics supply industry through patents

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Source : Vandana Shiva 2001

The dependence on import of seeds on the one hand and export of processed foods on the other has the very real danger of creating new forms of poverty and deprivation within the country, and

making us totally dependent on a handful of multi nation interests for the supply of inputs and the purchase of our agricultural commodities. The Pepsico project for the lab-to-farm-to-factory integration of seeds and agro-processing an example of what the new liberalization implies.

The pharmaceutical giants, Sandoz India, as entered into an agreement with Northrup King of the US, subsidiary of its multinational patent company, and also with the Dutch vegetable king, Zaaduin. ITC is trying up with Pacific Seeds, a subsidiary of Continental grains from Australia. The US seed giant Kargill INC has tied up with the Gilland company retaining controlling interest of the company. To other US companies, Seedtec International and Dehlgien, have entered into agreements with Maharashtra Hybrid and Nath Seed Company respectively. Pioneer HI-bred has started an Indian Subsidiary Pioneer Seed Company. Apart from these, Hindustan Lever is negotiating with a Belgium firm while Hoechst, Ciba-Geigy are reportedly moving in with other tie-ups

Seed is the first link in the food chain. Whoever controls the seed controls the food supply. Therefore Monsanto spent over \$9.4 billion acquiring seed and biotech companies, Dupont spent over \$9.4 billion to acquire Pioneer Hi-Bred, the world's largest seed company and Dow Chemical bought Kargill Seeds North America in mid September 2000. In spite of this, the control cannot be total as long as farmers can save, share, exchange and sell seeds among themselves. Today, the farmer saved seed and state-run seed programmes are worth around \$22 billion, which is almost equal to the 423 billion total commercial seed market worldwide.

The terminator technology which is not yet commercialized in India, has as primary aim, the maximization of the seed industry's profits by destroying the ability of farmers to save their seeds and breed their own crops. Genetic seed sterilization goes far beyond intellectual property. A typical patent provides an exclusive legal monopoly for 20 years but Terminator is a monopoly with no expiration date. It is the perfect tool for the corporate seed industry in a global market - because it destroys the concept of national seed sovereignty.

The false miracle that seed companies are selling with biotechnology and genetic engineering is the possibility of liberating agriculture from chemicals and other ecological risks. However, most of the seed multinationals are also leading chemical companies. These include Ciba-Geigy, ICI Monsanto, and Hoechst. The immediate strategy for these companies is to increase the use of pesticides and herbicides by developing pesticide and herbicide tolerant varieties.

While deepening corporate control of agriculture, the biotechnologies also expand the scope for this control. While markets for agrochemical inputs and HYV seeds were restricted to regions with irrigation, the Bio-revolution will permit the extension of commercial agriculture to all regions, to rainfed lands and marginal soils. The impacts of the Bio-revolution thus have the potential to encompass the entire rural populations of the Third World. Transnational will thus gain total market control in a sector around which the life and livelihood of millions of farmers and peasants revolves.

Indigenous breeding through selection has given access to the best seeds to all, and the crop itself provides the seed. Richaria's work on conserving indigenous strains has established that by

marinating control over seeds, the peasant need not sacrifice in terms of yields. The hybrid seed must be bought each year from the seed merchants. The genetically engineered 'seed' of the Bio-revolution will deepen this dependence of peasants on MNC's. The lab, not nature, will become the sole source of seeds of the biotechnologies, and with labs shifting from universities to the corporate sector, from the public to the private domain, only those who can pay, will have a right to seeds.

Globally and nationally, food grain production has been dramatically reduced due to ecological instabilities. These include drought, induced both by climatic change associated with the Greenhouse effect, and desertification through inappropriate land and water use. The momentum of grain production between 1950 and 1984, when world output grew from 624 million tones to 1,645 million tones has waned in recent year and may continue to dip further.

What will be the impact on the availability of staple foods as more and more land is diverted to fruits and vegetables for export, at a time when food scarcity is already a reality, both nationally and globally? And with the pressure from the World Bank and the IMF to reduce food subsidies, how will the food entitlements of economically and politically weakest groups be protected?

Cash crops, especially for export, are subject not just to ecological risks, but to financial risks as well, because cash crops for export do not produce much cash over time. The growth of export-oriented cash crop agriculture is a primary reason for Africa's food crisis. The main drawback to cash crops is that over the year they produce less and less cash. Cash crops are encouraged over food production by an export oriented agriculture policy. As the area under commodities for exports grows, prices fall and returns decline instead of increasing.

Contracting Seed Production: Private sector seed companies produce patent seed and breeder seed on their own farms. This is principally for reasons of security. Farmers are then supplied with foundation seed and produce hybrid seed under contract. Few company representatives identified land ceilings as presenting a problem in seed production. This was partly because circumventing restrictions upon land ownership (or at least leasing) was considered straightforward. Even in the event of land ceilings being abolished, they still envisaged contracting seed production to farmers. Large areas of land are required for the production of hybrid seed, and it was considered uneconomic to attempt this on corporate owned holdings. That land ceilings are not considered an issue by many companies is demonstrated by the ignorance of company representatives of actual land ceilings. In Andhra Pradesh, for example, manager's estimates of the maximum possible land holding ranged from 45 acres to 550 acres.

But there is a further incentive for companies to continue contracting seed production to small farmers. B.D Sharma, Former commissioner, Commission on Schedule Cast & Schedule Tribes, Government of India, points out that "the embodiment of labor in agricultural produce has been devalued by treating family farm labor as of zero value, because it is free". The whole family at minimal expense, whereas on corporate farms, management staff would need to be employed at additional expense".

Great care is exercised over cultivation of small areas of crop by a farmer and his family, not least because their very livelihood depends directly upon the productivity of their land.

The epidemic of farmer's suicide is the real barometer of the stress under which Indian agriculture and Indian farmers have been put by globalization of agriculture. Growing indebtedness and increasing crop failure are the main reasons that the farmers have committed suicide across the length and breadth of rural India. The suicides by farmers highlights these high social and ecological costs of the globalization of non-sustainable agriculture which are not restricted to the cotton growing areas of these states but have been experienced in all commercially grown and chemically farmed crop in all regions. While the benefits of globalization go to the seeds and Chemical Corporation through expanding markets, the cost and risks are exclusively born by the small farmers and landless peasants.

Globalization and privation of the seed sector have eroded farmers seed supply and seed supplied by the public sector. While the entry of private seed companies is justified on grounds of increasing farmers options and choices, by making farmers look down on their own varieties as inferior and by eroding the capacity of the public sector, globalization has in effect created a seed famine.

Besides putting their own resources, the middle and small farmers borrow money, paying high interest rates, from "arthies" or private moneylenders who also provide them seeds, fertilizers and pesticides on credit. The rise of moneylenders is a part of an emerging phenomenon of corporate feudalism. Withdrawal of low interest credit has been a key element of the World Bank led economic reforms.

### **Women as Seed Keeper**

Over the centuries women have made great contribution to conserve the seeds. Even tribal and poor women have been involved to save seeds as amply manifested by the following few examples in Jharkhand.

#### **Bhelwara Village, Bishungarh**

Sabitri, lives in Bhelwara - a village in Bishungarh, the next lane, is a self-assured, smiling young woman. She has passed class VII and has three sons. She knows the names of many old rice strains that the village had before. Her husband Ravi Shankar Mahto confirms: " We had bal-bhog, man-bhog, purbi sail, kart baki and maina tho. Each of these had different characteristics. They needed less water and no fertilizer. They don't need DAP, urea or pesticides. But the new produce twice as much". The result? " Khet kharab hoe gelo", says Sabitri, " Labh ke liye purano dhan chhod diyo (Now the fields are spoilt. For profit people left off planting the old strains)".

Bindiya Devi is a second success story. A matriarch of 80 plus, Bindiya became a widow after her first child. She lives with her son and a large extended family. Daughter in law of Bindiya Devi says the real result of the shift to the new seeds is more work for the women. 75 per cent of the transplanting is done by women over a 40 day period and 95 per cent of the weeding is done by

women. Post -planting, their work has increased due to weeding (dhan nikauni), unless you weed strenuously the improved varieties will choke. There were few weeds in the old rice because it's tall and blocks the light. Now the DAP, etc. greatly strengthen the weeds. "The leaves are hard like knife blades. They don't cut the skin like the new ones do". The backaches with the long hours spent weeding and the fingers and palms of their hands get red. They get sores and cut around their nails. "We simply can't grind turmeric and other sharp spices any more," she says.

There's a great difference in taste too as well as in other characteristics. There was one very productive hybrid variety, which they soon rejected. If you cooked it at 6 pm it would spoil by 11 pm so if the men came home late for dinner no one would get to eat until a second meal was cooked.

Bindiya's family still plants 50 per cent of the land with the old 'seed. "It's less risky," she says, "needs less water. When cooked it doesn't spoil for two days". But they still seem to spend a lot more on health. In spite of severe arthritis, Bindiya still does some of the work of sorting and storing seeds. She has a mora, a 3-foot high coil of rice straw plastered inside with cow dung and clay to hold paddy in and the bamboo dimni in which they store seeds. There used to be a practice of exchanging seeds within the village earlier, she says. Now the men take the surplus and give it to the block in exchange for new seeds.

The Kurmi women contribute a major part of the labour as in any rice growing culture, but we sense a change in their role and status here. It's the men who go to the block and interact with the extension people. The men sell the grain surplus and leftover seeds. The women don't read the books given by the block and the agri-shops and can't quite figure out the new methods for themselves. Somewhere, they've lost out it, the new agriculture that is being pushed by the seed companies through the willing agency of the block officials.

### **Jagdishpur**

The Kurmi Mahato women of Jagdishpur have discovered a new vocation, which helps them to offset the decreased earnings from agriculture. Earlier they would gather fresh picked garden green and other local vegetables and carry them all the way to town for sale in the daily market. Now, Jamuna Devi and many other women trek the 15 km to Hazaribagh town each morning to buy vegetables and market them in baskets from house to house. To the women of the middle class localities and government colonies, Jamuna out her wares with a basket on her head looks like a typical village woman come to them straight from her own kitchen garden.

Jamuna and her friends leave home at 6 am and return after dark, with money twisted into their saris at the waist. Jamuna earns a profit of Rs.1500 a month selling vegetables this way. Cash in hand gives these women a sense of status and a say in the home as an acknowledged breadwinner. All their earlier work in the rice fields and vegetable gardens went unrecognized. A new venture had given them economic independence, a newfound business sense, but it also means a continuing neglect of the productive assets they already own in the form of their cultivated lands and herds of domestic animals.

Karra Block's headquarters are situated about 40 km from Jharkhand's state capital Ranchi. The Karra Society for Rural Action has initiated a micro-finance programme for women farmers and entrepreneurs in the block. There are at present 255 groups with a membership of about 4,250 members. The NGO promotes sustainable development, organic agriculture, craft and other income generating activities and environmental restoration.

The Karra society helps farmers to innovate by distributing a variety of seeds for trials on test plots. Crops that do well are then selected for cultivation the following year. In this the society support from the Bihar Beej Nigam (Bihar Seed Corporation), the block agriculture office, and the Birsa Agricultural University (BAU), who are all activity promoting new crops. Farmer's seeds of the previous year may be exchanged for new seeds of the type being promoted by these organizations as well as a number of other private players in the field. A groundnut variety with the trendy name AK 1224, and various lentils are distributed at low cost by the block. Soyabean for some reason is distributed free at cost to farmers for planting.

Society members say that farm families rely on their own seeds for marua (finger millet) And traditional rice strains like bhajana , sursuia, mis, samanpuia and tulsu nanjan, However, they are increasingly experimenting with hybrid seeds that the local shops stock. Sita Devi and her husband Ram Prasad Mahto have two acres of wetland paddy and several plots for vegetables. They grow cauliflower, tomatoes, ginger, groundnut, corn and potatoes. They manage to preserve and plant their own seeds for chilies, radishes, summer squashes and beans, mustard and spinach.

The story of Martha Bakhla, chairperson of Mahila Mandal is different Tribal farmers are hesitant about adopting new practices and technologies because they don't have the capital with which to buy expensive inputs and they don't want to take loans banks, the LAMPS and other government sources. "You can get fertilizers on installment now. Chemical fertilizers give you greater production at first; later you don't get the same results," Martha says.

For one or two years even women would go out and take loans for agriculture. Then interest rates went up. People couldn't pay back the loans. Some farmers were jailed. There is a system here called kurki-jabti by which the bank and moneylenders can confiscate animals of loan defaulters. People saw this happen and got scared. An organization called World Vision has adopted some villages nearby and one of the things they are promoting is soybeans, which they distribute at Rs.1.5 per kilogram. No one has tested the seed to check its provenance. There is a type of contract farming being promoted in Karra. The agency, be it the block office or the NGO give the seeds and also help market the produce. New seeds are sometimes distributed free for testing on farmer's fields.

Martha says tribal farmers are more conservative in their choice of cropping pattern here. They plant several traditional varieties of rice in their don khet (wetland paddy fields): bhojana, rais, dahiya, hat higonja, lal dhan. In the uplands they wait for the rains in sawan and plant godha dhan (upland rice), and a mix of sarguja and sesame as oilseeds. "There is less investment, better taste, and we're independent. We can sell our produce within the village or in the local hoot (weekly village market),"

With loans from the micro-credit scheme run by the Karra Society, the Malgo women's group has decided to go commercial. This monsoon they will plant marigolds and ginger. The first will be picked up by flower buyers who come daily to Karra for their suppliers. The second is selling at Rs. 80 per kilogram in the bazaar in Ranchi, up 300 per cent since last year due to a shortage being felt in the whole of North India this season. Micro-finance through their own savings has helped these women to diversify and experiment with new crops, unlike the men folk in their village.

### **Biopiracy of Wheat by Monsanto**

Wheat forms an integral part of the life of most Indians. It has been the principle crops in several regions of India for thousands of years. India is the second largest producer of wheat (73.5 million tones) after China. It is cultivated in 25.68 million hectares in India.

Apart from being the staple food of most Indians, wheat in India has been closely associated with religious ceremonies and festivals since time immemorial. Each traditional variety has its own religious or cultural significance. The different varieties of wheat, the use of different wheat preparations in rituals, and the medicinal and therapeutic properties of wheat have all been documented in ancient Indian text and scriptures. (Shiva and Ritu 2003)

Monsanto's patent (EP 0445929 B1) claims to have "invented" wheat plants derived from a traditional Indian variety, and products made from the soft milling traits that the traditional Indian wheat provides.

Monsanto repeats the biopiracy pattern that was earlier attempted by RiceTec's claim to have invented Indian Basmati. Through a case filed by the RFSTE in the Indian Supreme Court, which forced the government of India to challenge the RiceTec Patent No. 5663484 in the USPTO, and a national and global movement against basmati biopiracy, we succeeded in having 99% of the RiceTec patent revoked. Earlier we had started the Neem campaign to challenge the USDA/GRACE patent, which was revoked in EPO in May 2000. With Greenpeace, we are preparing a challenge against Monsanto's biopiracy of Indian wheat. And with farmers groups in India, Navdanya, a programme under RFSTE, is working to conserve, rejuvenate and grow native wheat varieties which were displaced and marginalized by the Green Revolution, even though in terms of nutrition per acre and productivity with respect to water, they are superior to the industrial varieties which depend on intensive inputs of chemicals and water.

In reply to a Parliamentary Question on the Monsanto wheat Biopiracy, the Minister of Agriculture has replied, (starred question no. 8 dated 21st July 2003), "M/s Plant Breeding International, a Unilever company which was acquired by Monsanto in 1998 has obtained a patent for a new variety of wheat designed for use in Europe. This variety incorporates some characteristics of the Nap Hal land race of wheat from India. The Nap Hal land race is not covered by the European patent and continues to be available to Indian farmers and researchers".

The reply indicates that the government of India is not planning to take any action against the Biopiracy and is in fact legitimising it. The reply also, accepts two flaws in the patent claim. Firstly, European law does not allow' patenting of plant varieties. Secondly, the reply accepts "Nap Hal" as a name of a land race in India, even though no farmer in India would name a traditional variety "Naphal".

**Naphal means "no fruits" - No farmers variety could have such a name**

The plants claimed as inventions in Monsanto's patent are essentially derived varieties of traditional Indian wheat referred to in the patent as "Nap Hal" available as accession No. 1362 from the AERC Institute of Plant Science Research, Norwich, U.K. There is no traditional Indian wheat called Nap Hal. In Hindi the word would mean that which gives no fruit. Nap Hal is not an Indian name for an indigenous wheat variety. It could have been a name for Monsanto's 'terminator seeds'. The vernacular names of wheat varieties are khani, mundia, rotta, sita, kathia, jandi and many others. Government also says that the Naphal was collected from Marcha, Uttar Pradesh by a United States Department of Agriculture (USDA) explorer in 1948 and was received back by us from USDA in 1992 and conserved in the Directorate of Wheat Research, Karnal and NBPGR. It is wrong to say that USDA explorer in 1948 explored the Nap Hal variety and in any manner contributed to the traditional bio-wealth. In 1948 the alleged explorer did not make the collection himself but was handed over these varieties. Even the locations specified by the USDA explorer are inaccurate and the altitudes and longitude/latitudes by the match. Allegedly, W. Keolz made following collections:

**Table - 1.3 (3)**

| <b>Date of Collection</b> | <b>Locality</b>  |
|---------------------------|--|
| 10.4.48                   | Marcha, Uttar Pradesh, India<br>Elevation - 3050 meters<br>Latitude - 28 degree mm N<br>Longitude - 80 degree mm E     |
| 10.7.48                   | Subu, Uttar Pradesh, India<br>Elevation - 3050 meters<br>Latitude - 28 degree mm N<br>Longitude - 80 degree mm E       |
| 19.7.48                   | Nabi, Uttar Pradesh, India<br>Elevation - 2745 meters<br>Latitude - 29.50 degree mm N<br>Longitude - 79.30 degree mm E |
| 21.7.48                   | Sara, Nepal<br>Elevation - Not given<br>Latitude - 28 degree mm N<br>Longitude - 84 degree mm E                        |

(Shiva & Ritu 2003)

It is pertinent to mention that Latitude 28 degree N and longitude 80 degree E lies in the plains of Saharanpur and not place of Marcha in Uttar Pradesh. Even the elevation in Saharanpur is not 3000 meters. This altitude of 3000 meters is in the Himalayan ranges with different latitude and longitude. It is further mentioned that there is no village in Uttar Pradesh with specifications given name as Marcha. Marcha is a sub tribal category of the Bhotias who are Tibetans speaking Buddhist living in the upper regions of the Himalayas. The discrepancy in the location and the name in case the variety referred to as Nap Hal was pirated and was not collected by the alleged explorer. It is the government's duty to investigate which variety has been incorrectly recorded as Nap Hal and correct the nomenclature appropriately. Wheat is the most documented crop in India since formal breeding of wheat started more than a century ago in 1905.

NP – 4/Pusa 4/Niphad 4 is beardless variety with felted, white glumes with grains of an amber colour. Sir Albert Howard (known as the founder of modern organic farming, the author of the "Agriculture Testament" in whose honour RFTSE/Navdanya organises the annual Howard Memorial Lecture on Non violent Agriculture on Gandhi Jayanti, the 2nd October), his wife G.L.C. Howard and Habibur Rehman Khan selected the pure lines NP-4 (Pusa-4) from the mundia land race in 1905. "Mundia" combined higher yield potential, early maturity with superior grain quality features. As a ICAR report states "It soon crossed the national boundaries and was adopted in many countries. The variety won prizes in several international grain exhibitions as one of the best grain quality wheat during 1916-1920". This is how it must have entered the U.K. collections and got recorded under the distorted name "Nap Hal". Indian wheats have travelled widely since 1873, with the opening of the Suez Canal and removing export restrictions. Indian wheat was so important a crop for the British Empire that an important Resolution of the Government of India no. 1 - 39-50 of March 14th, 1877 was passed on the wheat question requiring the Governor General to provide all information on Indian wheat including "local names for the varieties of wheat cultivated and three description in English". More than 1000 wheat samples in bags 02 pounds each were sent to the India office, examined by Forbes Watson, and a detailed report provided to the Secretary of State. It is the traits, not the name that will be the basis of our challenge of biopiracy and we are working on the analysis of the traits of various varieties conserved by Navdanya farmers and grown by traditional farmers.

The soft milling low elasticity traits of India wheat have been patented. The wheat plant claimed as invention in Monsanto's patent relates to products derived presumably from the primitive land race from India called "Naphal". Naphal are extremely unusual in lacking two High Molecular Weight (HMW) subunits of glutenin coded by the "x" and "y" genes, which refer as the "Glu – D1 double null" trait. The HMW subunits of glutenin, which make up only about 6-10% of the gluten (wheat protein) content of wheat are, the key components in conferring elasticity and dough mixing stability. Due to the lack of HMW glutenin in Naphal, the dough becomes more easily hydrable than other wheat and produces very weak inelastic dough, which is very extensible. This is advantageous in making of semi-sweet biscuits, non-fermented crackers, wafers, and food and food ingredients made from batter because the flour will form dough with less water (when Sodium Metabisulphite or SMS is not used).

The production of a strain of wheat variety Galahad-7 claimed by Monsanto comprised of crossing a commonly grown soft wheat variety "Galahad" with a "Sicco" line containing the "NapHal" Glu-D1 double null wheat strain (Nap-Hal x Sicco). The wheat provides flour from which dough can be prepared at ambient temperature without the need for chemical treatment (SMS) of the flour at ambient temperature and is useful in the manufacture of biscuits, crackers and wafers and other. The Galahad-7 is essentially derived from native Indian wheat. Crossing is an obvious step in breeding and since both the criteria of novelty and non-obviousness necessary for patentability are violated, the patent should be revoked.

Even though plants are not an invention the first statement in Monsanto's patent states "this invention relates to plants and to products derived there from" In this case the plant is essentially derived from the traditional Indian wheat's which Indian farmers have collectively evolved and conserved over millennia. The Monsanto patent in effect pirates the collective cumulative innovation of Indian farmers and people claims the piracy as an invention. The traits of Indian wheat, which is being claimed by Monsanto, as its invention are traits evolved for India's food culture and cuisine based on "rotis" and "chapattis". The patent is thus a piracy not just of millennia of breeding by Indian farmers but also of millennia of innovation in food qualities.

Gluten (wheat protein) plays an important role in the texture of chapattis and other food preparations made from wheat. The gluten content of wheat varies from about 9-13%. The hard milling varieties contain more gluten than the soft milling one, which are more suitable for chapattis.

### **Soft Milling Wheat is not an Invention; it is Our Daily Diet**

For thousands of years we have eaten soft milling wheat appropriate to our food culture. Ignoring the daily diet of one fifth of humanity, Monsanto arrogantly claims "No wheat varieties are yet available commercially which are soft milling and from which a dough with low or very low elasticity can be prepared with out either chemical treatment or the use of carefully controlled conditions (e.g. low temperature) during the preparation of the dough. The need to maintain critical conditions during dough preparation is obviously a serious constraint on manufacture. The need for chemical free treatment of the flour usually conducted with sodium metabisulphate (SMS) would be avoided. If possible, especially in view of the current consumer pressure for foodstuffs those have been "chemically treated". It is generally recognized that the biscuit making industry would avoid the use of SMS if there was any commercially viable alternative".

The alternative is available on a very wide scale in India in our daily food. This is the alternative which Monsanto has pirated. Monsanto's claim covers wheat plants derived from Indian wheat varieties and products made from soft milling wheat.

The patent needs to be revoked because it is not an invention. It also needs to be revoked because with an exclusive right to grow wheat with low gluten and produce high value products with it, Monsanto could extend these rights to India under the Patent Cooperation Treaty (PCT) and then

charge royalties from farmers growing traditional wheat varieties. Even if the patent is not recognized in India, Monsanto's biopiracy patent in Europe and USA prevents India from deriving benefits from the growing market in US and Europe for hemicidal, low gluten, wheat products.

### **Native Indian Wheats**

Years of research on Indian wheat by Sir Albert Howard, his wife G.L.C. Howard and Habibur Rehman Khan, has resulted in diverse range of wheat varieties. They made a comprehensive collection of the wheat 'sorts' enormous variability present in the land races. They identified 37 separate botanical varieties of wheat belong to 10 subspecies.

### **Sir Albert Howard Contribution towards Indian wheat**

Sir Albert Howard was the founder of the organic farming movement. He worked for 25 years as an agricultural investigator in India, first as Agricultural Adviser to States in Central India and Rajputana, then as Director of the Institute of Plant Industry at Indore, where he developed the famed Indore composting process, which put the ancient art of composting on a firm scientific basis, but most of his work in India was on improving crop varieties mainly of wheat. He and his wife G. loc. Howard formed a brilliant scientific team during a long career in India. They achieved good results with the wheat. Howards were the first to undertake in India wheat breeding work on a systematic basis. In 1906 they commenced both at Pusa (Bihar) and Lyallpur in the Punjab (now in Pakistan), a system of selection from single plants which enabled them to produce several wheats of much greater value than the mixtures then in cultivation. The Howards were able to develop within a short time several varieties, outstanding in yield and quality, by selection from local types. Prior to the imitation of wheat improvement work in India, various mixed types of wheat were being grown in different areas, the types being designated by local names. Often hard and soft - kernalled types, or red and whitekernalled sorts would become mixed with the result that price of Indian wheat in the export market was very low. From these various types the Howard isolated many pure line of which two became widely grown varieties, Pusa 4 and Pusa 12 (now called N.P. 4 and N.P. 12). Pusa 4 has plump, hard grains and the Pusa 12 is a soft wheat with white grains. These are outstanding examples of the results achieved at Pusa through individual plant selection. Pusa 4 (NP 4) a pure line selection from the local 'sorts', Mundia', combined higher yield potential and early maturity with superior grain quality features. It soon crossed the national boundaries and was adopted in many other countries. The variety won prizes in several international grain exhibitions as one of the best grain quality wheat during the years 1916-1920. Work on similar pure lines were carried by the Howards at the centers resulted in the production of improved types, such as Type 9, type 90, Type 11 and Type 8A, at Lyallpur in the Punjab (Pakistan), C13 (K13) at Kanpur in Uttar Pradesh, and Ao.13 and Ao.90 at Nagpur in-Madhya Pradesh.

### **Cargill's 'Nature Fresh' Atta Spells Doom For Chakki Fresh Milling**

Cargill is the world's largest grain trader and the largest privately owned company in the US. Both domestically in the US, and internationally, Cargill uses its size, its information and its tremendous

financial resources to influence the price of agricultural commodities. Cargill controls over 70% of the world's trade in cereals. Cargill Foods has been aggressively marketing its wheat flour in India and distributing free samples to establish its monopoly in the wheat trade and flour milling. Since Cargill has entered the wheat trade in India, half of the processing mills in Punjab have been closed down. Cargill's war on our food system if not stopped would have serious implications on our food systems and agricultural sector as bad as the Kargil war. Infact, Cargill has used the Kargil victory celebrations to launch the free distribution of "Nature Fresh" atta thus exploiting the sentiments of the public and creating confusion in the minds of consumers.

Cargill says that it is 'Delivering increased value' to producers. This to Cargill means, contract farming, where the farmers will be compelled:

- Buy seeds from Cargill or Cargill-specified seed companies.
- Use Cargill's phosphates and other fertilizers specified by Cargill
- Use pesticides specified by Cargill
- Have Cargill inspectors grade the produce, and finally
- Sell to Cargill at a predetermined price.

Cargill would like to put a stop to the saving of seed by farmers, of free exchange of seed between farmers. In its propaganda it does this by declaring the scientific traditions of farmers as 'unscientific'. In its technology it achieves this through hybrid seeds, which force the farmer to return to Cargill at every sowing.

#### **Delivering increased value to consumer's means that Cargill:**

- Manipulates prices to farmers and international prices as well as domestic prices of agricultural produce and their processed products.
- Controls storage by controlling giant silos and elevators that can hold the world's grain reserves for more than a year.
- Controls transportation of the grain from the farm to the store by controlling shipping, road and rail routes.
- Controls processing by controlling milling and extraction and other processing operation
- Provides no access to information about the process and the product.

#### **Erosion of Women's Control on Seed and Biodiversity**

Seeds are the first link in the food chain. For five thousand years, peasants have produced their own seeds, selecting, storing and replanting and letting nature take its course in the food chain. The feminine principle has been conserved through the conservation of seeds by women in their work in food and grain storage. With the preservation of genetic diversity and the self renewability of food

crops has been associated the control by women and Third World peasants on germ plasm, the source of all plant wealth. All this changed 'with the green revolution.

At its heart lie new varieties of miracle seeds, which have totally transformed the nature of food production and control over food systems. The 'miracle' seeds for which Borlaug got a Nobel Prize and which rapidly spread across the Third World, also sowed the seeds of a new commercialization of agriculture. Borlaug ushered in an era of corporate control on food production by creating a technology by which multinationals acquired control over seeds, and hence over the entire food system. The green revolution commercialized and privatized seeds, removing control of plant genetic resources from Third World peasant women and giving it over to western male technocrats in CIMMYT, IRRI and multinational seed corporations.

Women have acted as custodians of the common genetic heritage through the shortage and preservation of grain. In a study of rural women of Nepal, it was found that seed selection is primarily a female responsibility. In 60.4 percent of the cases, women alone decided what type of seed to use, while men decided in only 20.7 percent. As to who actually performs the task of seed selection in cases where the family decides to use their own seeds, this work is done by women alone in 81.2 percent of the households, by both sexes in eight percent and by men alone in only 10.8 percent of the households.

Throughout India, even in years of scarcity, grain for seed was conserved in every household, so that the cycle of food production was not interrupted by loss of seed. The peasant women of India have carefully maintained the genetic base of food production over thousands of years. This common wealth, which had evolved over millennia, was defined as 'primitive cultivars' by the masculinist view of seeds, which saw its own new products as 'advanced' varieties.

The green revolution was a strategy of breeding out the feminine principle by the destruction of the self-reproducing character and genetic diversity of seeds. The death of the feminine principle in plant breeding was the beginning of seeds becoming a source of profits and control. The hybrid 'miracle' seeds are a commercial miracle, because farmers have to buy new supplies of them every year: they do not reproduce themselves. Gains from hybrids do not produce seeds that duplicate the same result because hybrids do not pass on their vigour to the next generation. With hybridization, seeds could not more be viewed as a source of plant life, producing sustenance through food and nutrition; they were now a source of private profit only (Shiva 1992)

Green revolution varieties of seeds were clearly not the best alternative for increasing food production from the point of view of nature, women and poor peasants. They were useful for corporations that wanted to find new avenues in seeds and fertilizer sales, by displacing women peasants as custodians of seeds and builders of soil fertility, and "they were useful for rich farmers wanting to make profits. The international agencies which financed research on the new seeds also provided the money for their distribution. The impossible task of selling a new variety to millions of small peasants

who could not afford to buy the seeds was solved by the World Bank, UNDP, FAO and a host of bilateral aid programmes which began to accord high priority to the distribution of HYV seed in their aid programmes.

Over the past decade, through new property rights and new technologies, corporations have hijacked the diversity of life on earth, and people's indigenous innovation. Intellectual Property Rights (IPR) regimes globalized through the TRIPs agreement of WTO and have been expanded to cover life forms thus creating monopoly control over biodiversity.

Patents on life are a hijack of biodiversity and indigenous knowledge; they are instruments of monopoly control over life itself. Patents on living resources and indigenous knowledge as an enclosure of the biological and intellectual commons.

The Biodiversity Act, 2002, which should have been aimed at defending community rights, has instead facilitated the privatization of biodiversity and indigenous knowledge. This is why the success of movements in forcing syngenta to back off from piracy of our rice collections is significant.

As one of the oldest and largest agricultural societies, India also has an impressive diversity of at least 166 species of crop plants and 320 species of wild relatives of cultivated crops. Forests, which contain much though by no means all of India's biodiversity, now comprises about 64 million hectares, or about 19% of land area of India, according to satellite imagery. Roughly 33% probably represents primary forest. About 10 million hectares are managed as "protection forests" for ecological stability, 15 million for production of timber and 25 million as social forest to meet the demand for the fuel wood and fodder. About 14 million hectares lie within national parks and wildlife sanctuaries.

Of the estimated 45,000 plant species, about 15,000 species of flowering plants (6% of the Worldwide total), an estimated 33% are endemic to India. Areas rich in endemism are Northeast, the Western Ghats and the North Western and Eastern Himalayas. However, the Andaman and Nicobar Island contribute at least 200 endemic species to the endemic flora. Estimates of other plant taxon include 5,000 species of algae, 1,600 lichens, 20,000 fungi, 2,700 bryophytes and 600 pteridophytes.

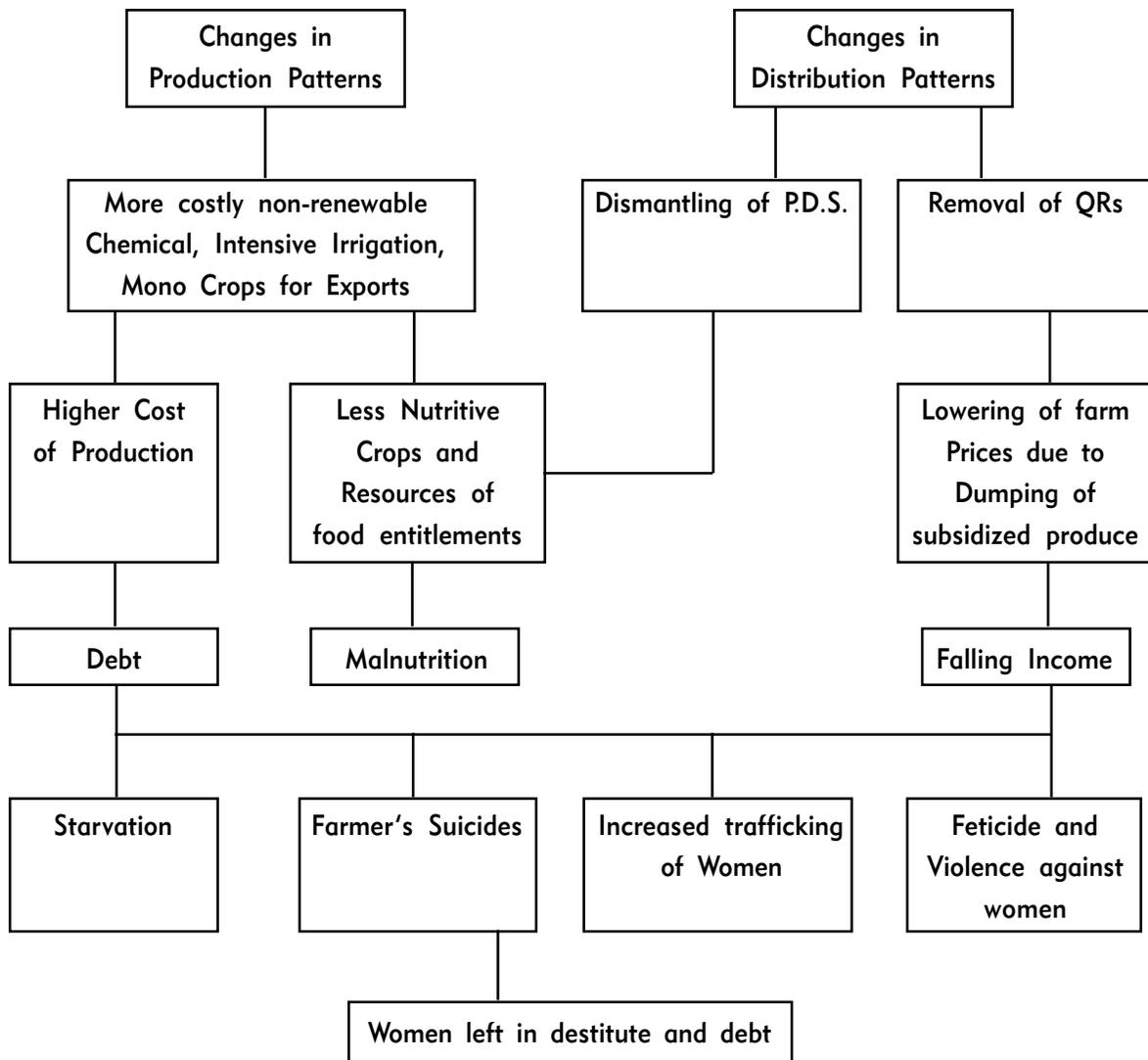
And of the estimated 81,000 fauna species includes 50,000 insects, 4,000 molluscs, 200 fish 140 amphibians, 420 reptiles, 1200 birds and other invertebrates. India's bird species represent about 13% of the world's total. Mammal fauna comprises 372 species, with 63% found in Assam. Thus India is home to about two lakh species of living organisms.

Most of the people in our country derive their livelihood and meet their survival needs from the diversity of living resources. The indigenous knowledge system in medicine, agriculture and fisheries are the primary base for meeting the food and health needs of the majority of our people. In this context, therefore, conservation of biodiversity is intimately linked to indigenous knowledge system on the one hand and people's rights to protect their knowledge and resources on the other hand. Whenever biodiversity is threatened and eroded, people's rights and people's knowledge is also eroded.

Seventy percent of India depends upon traditional systems of production for their survival. The majority of the people in the rural areas, involved in agriculture are small, marginal farmers and peasants. Seeds produced and sold by farmer account for over 70 per cent of the total seed supply in the country. Similarly more than 70 percent of India's health care needs are met by traditional systems of medicines, whose practitioners use over 7,500 varieties of medicinal plants as part of their healing work. In fact the biodiversity based traditional healthcare system is being kept alive by 3,60,740 Ayurvedic practitioners, 29,701 Unani experts and 11,644 specialists of Siddha, according to an ethno botanical survey in late nineties. In addition millions of housewives, birth attendants and herbal healers carry on village based health traditions.

The sharing and exchange of biological resources and knowledge of its properties and use has been the norm in all indigenous societies, and it continues to be the norm in most communities, including the modern community. But sharing and exchange get converted to "piracy" when individuals, organizations or corporations who receive biodiversity and knowledge from indigenous communities freely and converts this gifts into private property through IPR claims.

## 1.4 IMPACT OF AGREEMENT ON AGRICULTURE AND TRADE LIBERALIZATION OF AGRICULTURE-ON WOMEN



**a. Change in Production Pattern**

**1. More costly non-renewable, Chemical, Input intensive Irrigation, Mono Crops for Exports and High cost of Production.**

On 7th August 2002, the Financial Express announced that Monsanto "bagged the trophy" at the Lakshya event at the National Institute of Industrial Engineering, Mumbai, for a rural marketing project. "The Project by Monsanto was a market development strategy aimed at capturing the small to marginal farmer segment. It was deployed at the Udaipur district in Rajasthan that forms the single largest maize growing district in the country. The objective of the project was to provide a solutions package to small farmers on improved technologies, particularly focusing on maize crops. Farmers were encouraged to train other farmers back home through a special 'Humsafar programme' .

Monsanto's much lauded project 'Humsafar' actually involves the introduction of its eco-narcotic, Roundup (the controversial glyphosate- based herbicide) to small and marginal peasants. In Udaipur, and turning an important local food and fodder crops into raw material for industry through the aegis of a nongovernmental organization Karmasheel Sansthan. The corporation used the devastating drought of 2002 as its entry-point.

Drought is invariably the harbinger of food and fodder shortage, creating famine conditions of both humans and cattle. In 2002, the drought-induced famine had killed over 30 people in Rajasthan, including 12 children. Monsanto's maize varieties, that are being promoted for industrial food, are also not giving the high yields promised, and have in many places, failed to perform adequately.

Maize is the most important food crop grown in Rajasthan, growing along with millet in areas where few other crops grow. Again, Rajasthan itself is the most important maize growing region in the country. The total area under maize cultivation in the country in 2001 was 65.5 lac hectares of which 9.6 lac hectares was in Rajasthan with 1.72 lac hectares in Udaipur, the highest maize growing district in the country where maize is sown over 75% cultivable land during kharif. The majority of the maize grown in Rajasthan is rainfed maize.

Maize is also an important industrial crop, as it produces a high field of starch/energy per hectare. In addition, like other cereal crops, its cultivation has often been diverted from being a food crop to a producer of starch, cellulose and as raw material for industrial production of glucose, sorbitol, dextrose, high fructose syrup, maltodextrin, germ oil, germ meal, fiber and other products which have applications in industries as diverse as alcohol, textiles, paper pharmaceuticals, organic chemicals, cosmetics, edible oil, poultry live stock and fish feed.

The cattle and poultry feed industry in particular consume enormous amounts of maize, which makes up almost 8-12 percent of the feed.

### **Monsanto's Maize will not increase food security**

Monsanto's claim of helping farmers of the Udaipur region of Rajasthan improves their living standards and thus their food security through the cultivation of their maize variety is false for the following reasons:

- i) Monsanto varieties need extra water, and thus create water shortage and contribute to drought. In fact, in large areas where sown, the varieties have failed because Rajasthan is facing severe drought conditions.
- ii) The yields promised by Monsanto have not been met in farmers' fields. In fact, Monsanto itself appears to be rather unsure about the productivity of its varieties, as it has highly varying claims in its various publicity material.
- iii) The production costs to farmers growing Monsanto's maize varieties are much higher than the costs to farmers growing local rainfed varieties, as the former varieties need chemical inputs, while the latter produce grain with on-farm inputs.
- iv) Monsanto is promoting the cultivation of its maize varieties as an industrial crop rather than as food crop. Today, there is just one purchaser for these varieties. This purchaser, Godrej Agrovat, pays higher rates for Monsanto's maize than the market rate, the company is not bound either to continue to buy from farmer, or give the same rate. Even at this high rate, the net returns to the farmer are lower than those growing local varieties, as the production costs are much higher.

### **Three Different Claims by Monsanto for Productivity of their Maize varieties**

Field staff at Wana and Menar villages in Udaipur reported that the Monsanto varieties have achieved maize productivity of 12 quintals/acre (30 quintal/hect). Monsanto won the Laskhya General and HR Management Award for its programme "Humsafar" by claiming that the yields of the farmers has increased to 20 quintals per acre (50 quintals per hectare), whereas, Monsanto through its publicity brochures distributed among the farmers is claiming even much higher yields.

| Reported by Monsanto field staff (in quintals) |          |             | Reported by Monsanto for the Humsafar Award (In quintals) |          |             | Reported by Monsanto in the publicity brochures (in quintals) |          |             |
|--|----------|-------------|---|----------|-------------|---|----------|-------------|
| Per Bigha                                      | Per Acre | Per Hectare | Per Bigha   | Per Acre | Per Hectare | Per Bigha   | Per Acre | Per Hectare |
| 2.4  | 12       | 30          | 4   | 20       | 50          | 10-18   | 50-90    | 125-225     |

#### **b. Comparison of productivity by farmers between Monsanto's varieties and desi (local) varieties**

Discussions with the farmers reveal that Monsanto seed has just nominally increased maize productivity. In the villages of Udaipur, Chittor and Banswara, farmers never weigh the maize grain, the yield is simply counted by the number of jute sacks; one sack maize contains around 100 kg.

**Comparison of Productivity of desi (local) maize with Monsanto's varieties based on farmers' experience.**

| Desi Varieties (In quinals) |          |             | Monsanto Varieties (In quintals) |          |             |
|-----------------------------|----------|-------------|----------------------------------|----------|-------------|
| Per Biga                    | Per Acre | Per Hectare | Per Biga                         | Per Acre | Per Hectare |
| 1.2                         | 6        | 15          | 1.4                              | 7        | 7.5         |

**Monsanto's Strategy: Co-opting NGOs and Universities**

Monsanto is aggressively marketing and promoting its maize seeds through the Humsafar (fellow traveler) program. The seeds being promoted include:

- All rounder
- Hi shell
- Asgro – 501
- Asgro – 633

The cost of these Monsanto seeds vary from Rs. 250 to 275 for a packet of 5 kg., whereas the same quantity of Desi/Local varieties costs only Rs. 25.

The Humsafar programme was launched in 2001 in 14 villages, which were adopted by Monsanto for detailed demonstration and popularization of maize cultivation. After four months. 14 more villages were included. Now programme has been extended to 98 villages in Udaipur, Chittorgarh and Banswara districts.

The Humsafar programme has been initiated with the NGO Karamsheel Sansthan, and the Rajasthan College of Agriculture, Udaipur (now known as Maharana Pratap Agriculture and Technical University)

The programme operates from seven 'Humsafar Kendra's' with seven persons overseeing the programme at the field level. Staff posted at the Kendra's conduct the field studies with the help of village sarpanch and other functionaries to find out where the farmers are involved in growing desi (indigenous) maize. The staff also assesses the willingness of the farmers to grow the Monsanto varieties of maize.

**Bt. Cotton.**

Although cotton acreage forms only five percent of India's total cropped area, over half the chemical pesticides on agriculture, amounting to about Rs. 1600 crores a year, is consumed by this crop. Controlling bollworm infestation in cotton with pesticide costs Indian farmers Rs. 1100 annually. With pesticide resistance increasing and becoming wide spread, chemical sprays do not always succeed in protecting the crop. The ICAR calculated that by using integrated pest management methods with one or two sprays, the Bt. cotton hybrids could save Rs. 1500 per hectare on chemical pesticides and provide additional return through higher yield of Rs. 7000 to Rs. 8000 per hectare. It therefore seems

highly probable that Bt cotton will enthusiastically be taken up by Indian farmers, the area under this transgenic crop is likely to grow rapidly. If the benefits from Bt cotton are immediate, the risk could take some years to manifest themselves.

A severe pest infestation is presently driving farmers to spray huge doses of pesticides in an attempt to save their crop. Yet virtually all farmers report that the pest simply cannot be controlled. This is hardly surprising considering the 600 fold resistance developed by bollworm to pesticides over the last 10 years according to cotton scientists. The costs of cultivation of cotton have increased so dramatically that in some villages, the debt accumulated over the last two to three years has risen to Rs. 50000 per household. It is no longer rare, for women to mortgage their 'mangalsutra' or land-owning farmers to sell an acre or two to start repaying their debt. The entire support system of this increasingly commercial agriculture made up of input dealers, money lenders and commission agents. More readily than men, women farmers express distress at watching the very land not used to produce a variety of dry land crops ( a mix of food, and cash crops such as jowar, red gram, green gram wheat) become useless in providing direct food for the family.

**Table - 1.4 (1) : Cost - Benefit Analysis Madhya Pradesh**

|    | <b>Particular</b>            | <b>Bt Cotton<br/>Cost (Rs. Per Acre)</b> | <b>Non Bt. Cotton<br/>Cost (Rs. Per Acre)</b> |
|----|------------------------------|--|---|
| 1. | Seeds                        | 1650                                     | 450   |
| 2. | Pesticides                   | 1100                                     | 1950  |
| 3. | Fertilizers                  | 1375                                     | 1375  |
| 4. | Irrigation                   | 750                                      | 750   |
| 5. | Plucking (at Rs. 2 per kg.   | 800                                      | 1480  |
| 6. | Other costs like sowing etc. | 1000                                     | 1000  |
|    | <b>Total</b>                 | <b>Rs. 6675</b>                          | <b>Rs. 7005</b>                               |

- i) Average yield of Bt. cotton 4.01 quintals/Acre Average yield of Non Bt cotton = 7.40 quintals/Acre.
- ii) Prevailing market rate of cotton in M.P. = Rs. 1800/quintals
- iii) Gross earning from Bt. Cotton =  $4.01 \times 1800 = \text{Rs. } 7218$ . Net profit from Bt. Cotton =  $\text{Rs. } 543/\text{Acre. } (7218 - 6675)$
- iv) Gross earning from Non Bt. Cotton =  $7.40 \times 1800 = 13320$ . Net profit from non Bt. cotton =  $\text{Rs. } 6315/\text{acre.}$

## Karnataka

Table - 1.4 (2)

|    | Particular                              | Bt Cotton<br>Cost (Rs. Per Acre) | Non Bt. Cotton<br>Cost (Rs. Per Acre) |
|----|---|----------------------------------|---------------------------------------|
| 1. | Seeds                                   | 1650                             | 450                                   |
| 2. | Pesticides                              | 2200                             | 4250                                  |
| 3. | Fertilizers                             | 3000                             | 3000                                  |
| 4. | Irrigation                              | 500                              | 500                                   |
| 5. | Plucking at Rs. 1.5 per kg.             | 575                              | 1050                                  |
| 6. | Other costs like sowing,<br>manure etc. | 1000                             | 1000                                  |
|    | Total                                   | Rs. 8925                         | Rs. 10250                             |

- i) Average yield of Bt Cotton = 3.82 quintals/ Acre
- ii) Average yield of Non Bt Cotton = 7.0 quintals/ Acre
- iii) Prevailing market rate = Rs.2000 per quintal
- iv) Gross earning from Bt Cotton =  $3.82 \times 2000 = 7640$
- v) Gross earning from Non Bt Cotton =  $7 \times 2000 = 14000$
- vi) Net loss from Bt. Cotton =  $8925 - 7640 = \text{Rs. } 1285/\text{ Acre}$
- vii) Net earning from Non Bt Cotton =  $1400 - 1025 = \text{Rs. } 3750/\text{ Acre}$

In the final analysis, as shown above, it is simply clear that the average yield of Bt Cotton in Madhya Pradesh and Karnataka is around 4 quintals/hectare, and not 15 quintals/hectare, as claimed by Monsanto.

The cost-Benefit analysis from the tables 4.1 and 4.2 amply reveals that the farmers in Madhya Pradesh earn only Rs. 543/acre from Bt. Cotton where as their earning from Non Bt Cotton is approximately Rs. 6315/acre. In Karnataka, farmers are at loss of rupees 1285/acre while cultivating Bt. Cotton and their earnings from Non Bt. Cotton is about Rs. -3750 per acre.

Bt. Cotton or the G.M./Transgenic crops compound, the instability of the entire system by introducing new risks such as the pollution of their traditional crops, a major threat on biodiversity, and the build-up of resistance in insects and plants. Since the time of hybrid seeds industry has captured the steering wheel of agriculture promoting the purchase of seeds, fertilizers and the pesticides as well as buying out small-scale dealers, acquiring and merging with one another.

When the Biodiversity door opened, chemical companies such as Monsanto, Dupont, ICI, Bayer and BASF jumped into the fray. They invested largely into research in G.M., merged and remorphed

themselves to an extent that their names also changed. ICI split to Zeneca then Astra Zeneca and after a merger with Novartis (itself borncut of Ciba Geigy and Sandoz) to become syngenta. Today, the entire G.M. crops and the food market around the world are in the hands of less than 10 companies. Agriculture has remorphed into agribusiness. It is this aspect that worries people. Appropriate national strategies to counter it will be needed soon. Wisdom lies in understanding what the costs and the benefits are, and minimizing the former while maximizing the latter.

### **Sugarcane : Crashing Prices, Cause Concern**

Sugarcane Cultivation and processing is an important source of agriculture income and employment. Sugarcane is the largest processing industry next only to cotton textiles. An instrinsic symbolic relationship exists with rural masses and it is a nerve center for rural development and employment. There are 414 sugar mills in India, which has emerged as the main producer of sugarcane at 300 million tonnes, from 4 million hectares at present, country is producing over 18 million tonnes of sugar. In addition, sugarcane supports a large number of open pan sugar (khandsari) and jaggery (gur) units in the unorganized sector with a production of over 10 million tonnes of jaggery.

The average SMP payable by the factories during last two years season works out to Rs. 75.14 per quintal in West U.P. and Rs. 71.34 per quintal in East U.P. This is the way below the prices of Rs. 100 per quintal on early ripening cane and Rs. 95 on common varieties, which the farmers were getting in the recent years. In other words, the industry is effectively seeking a Rs. 25 reduction in the cane price supplied by the farmers.

The lower price is however not acceptable to the farmers. According to farmers, for every quintal (100 kg) of cane crushed the mills obtain not only 10 kg of sugar but also six kgs of molasses and four kgs of baggasse and press mud. Even if the average ex-factory price of sugar has dipped to Rs. 12 per kg, if one computes revenue from other streams (taking average rate of Rs. 100 per quintal each for molasses, and baggasse and Rs. 10 per quintal for press mud), mills realize over Rs. 130 on every quintal of cane they purchase at Rs. 100. Even after accounting for conversion and processing cost, the mills would be left with a fair margin, which renders any reduction in cane prices totally unacceptable.

**Table 1.4 (3) : (a) Ghaziabad**

| <b>S.No.</b> | <b>Particulars</b>                        | <b>Cost Rs.</b> |
|--------------|---|-----------------|
| 1.           | Ploughing                                 | 500             |
| 2.           | Sowing                                    |                 |
|              | (a) (seeds), 25 quintal @ Rs. 100 Quintal | 2500            |
|              | (b) Chemicals to reduce mites etc.        | 1250            |
|              | (c) DAP 75 kg @ Rs. 9 kg                  | 675             |
| 3.           | Fertilizers, 5 Bag @ Rs. 50 per bag       | 1250            |

| <b>S.No.</b> | <b>Particulars</b>   | <b>Cost Rs.</b> |
|--------------|--|-----------------|
| 4.           | Water (8 times) @ Rs. 300  | 2400            |
| 5.           | Deweeding (Khundai) 4 times @ Rs. 600                              | 2400            |
| 6.           | Knotting (Bandhai) 3 times @ Rs. 500                               | 1500            |
| 7.           | Cutting (chhulai) Rs. 8 quintal for average yield of 275 quintals  | 2200            |
| 8.           | Transport Rs. 10 per quintal for the average yield of 275 quintals | 2750            |
|              | <b>Total Rs.</b>   | <b>17425</b>    |

**Table 1.4 (3) : (b) Meerut**

| <b>S.No.</b> | <b>Particulars</b>   | <b>Cost Rs.</b>     |
|--------------|--|---------------------|
| 1.           | Ploughing  | 500                 |
| 2.           | Sowing<br>(a) (seeds), 25 quintal @ Rs. 100 Quintal<br>(b) Chemicals to treat mites etc.<br>(c) DAP 75 kg @ Rs. 9 kg | 2500<br>1250<br>675 |
| 3.           | Fertilizers, 5 Bag @ Rs. 50 per bag  | 1250                |
| 4.           | Water (10 times) @ Rs. 300   | 3000                |
| 5.           | Deweeding (Khundai) 3 times @ Rs. 500  | 1500                |
| 6.           | Knotting (Bandhai) 3 times @ Rs. 500   | 1500                |
| 7.           | Cutting (chhulai) Rs. 9 quintal for average yield of 250 quintals  | 2250                |
| 8.           | Transport Rs. 10 per quintal for the average yield of 250 quintals   | 2500                |
|              | <b>Total Rs.</b>   | <b>16925</b>        |

**Table 1.4 (3) : (c) Baghpat**

| <b>S.No.</b> | <b>Particulars</b>   | <b>Cost Rs.</b>           |
|--------------|--|---------------------------|
| 1.           | Ploughing  | 500                       |
| 2.           | Sowing<br>(a) (seeds), 25 quintal @ Rs. 100 Quintal<br>(b) Chemicals to treat mites etc.<br>(c) DAP, 50 kg @ Rs. 10 kg<br>(d) Zinc - 1 bag of 5 kg | 2500<br>625<br>500<br>220 |
| 3.           | Fertilizers, 5 Bag @ Rs. 50 per bag  | 1250                      |
| 4.           | Water (20 times) @ Rs. 200   | 4000                      |
| 5.           | Deweeding (Khundai) 4 times @ Rs. 500  | 2000                      |

| <b>S.No.</b> | <b>Particulars</b>   | <b>Cost Rs.</b> |
|--------------|--|-----------------|
| 6.           | Knotting (Bandhai) 3 times @ Rs. 500                               | 1500            |
| 7.           | Cutting (chhulai) Rs. 10 quintal for average yield of 300 quintals | 3000            |
| 8.           | Transport Rs. 10 per quintal for the average yield of 300 quintals | 3000            |
|              | <b>Total Rs.</b>   | <b>19095</b>    |

Average Input cost per Acre Rs. 17815

Average yield per Acre = 275 quintals

Earlier gross income at the rate of Rs. 95 - 100 per quintals for the average yield of 275 quintals per acre - Rs. 26125 – 27500

Now Gross Income at the rate of Rs. 75 per quintals for the average yield of Rs. 275 quintal per acre = 20625

Earlier Net Income per acre = Rs. 8310 - 9685 (26125 -17815) and (27500 -17185) Now Net Income per acre = Rs. 2810 (20625 - 17815)

Reduction in farmers income per acre = Rs. 5500 to 6875 (8310 - 2810), and (9685 - 2810)

### **Reduction in Income**

For the small farmers with 2 acres of sugarcane = 11000 - 13750

Reduction in income for medium farmers with 5 acres of sugarcane - 27500 34375.

Reduction in income for large farmers having 10 acres of sugarcane - 55000 68750.

From the above analysis it is clear that there is change in cropping pattern, resulting in high cost of production and fall in income to the farmers affecting the survival of women.

### **Less Nutritive Crops and Resources of Food Entitlements**

Food security in agriculture is based on a delicate balance between market forces and public policy, and the rights of consumers as well as producers. This balance would ensure that food prices are not too high to take food beyond the reach of already deprived consumers, and not too low so as to push out domestic farmers from production. Food is not merely an item of consumption. Food production is also the most significant source of livelihood for most Indian people. It is through their participation in food production that most people in India are entitled to food. While lower food prices might be good for societies with hardly any farmers, they are devastating for food security in peasant economies - where livelihood depends on the sales of produce in domestic markets. (Shiva 1999)

Therefore, the impact of trade liberalization on food security is different in different socio-economic contexts. For those items where domestic prices are lower than international prices, trade liberalization leads to exports and thus a rise in domestic prices. Whereas for those items where

domestic prices are higher than international prices, trade liberalization leads to dumping and a displacement of domestic producers from agriculture. In such a situation, cheap food can be a prescription for famine when it displaces domestic producers and destroys their entitlement. (Shiva 1999)

A comparison of nutrition needs of a person assessed according to activity and rations at various times and various starvation/welfare diets, however a large section of poor and women do not get the required calorie.

**Table - 1.4 (4) : Welfare Diets for Starving the Poor**

|   | <b>Caloric Value Per day</b> | <b>Activity Level</b> |
|---|------------------------------|-----------------------|
| Basal Metabolism (adult)                            | 1500                         | No activity           |
| Government Rations during the Deccan Famine of 1877 | 1627                         | Heavy labour          |
| Buchenwald (Nazi Concentration Camp) rations (1994) | 1750                         | Heavy labour          |
| 7-year old child's approved diet requirement        | 2050                         | Moderate activity     |
| Indian adult (Subsistence)                          | 2400                         | Moderate activity     |
| Indian male approved diet                           | 3900                         | Heavy labour          |
| TDPS ration   | 100*                         | Heavy labour          |
| Anna Antyodaya Scheme Ration                        | 200**                        | Heavy labour          |

\* From Vinayak Prasad Access to Health Care in India : The Equity Concerns, Governance and Poverty : Contemporary Policy Reforms for India

\*\* Calculated from the above figure

### **Declining Food Production**

Agricultural policies that push the small farmer to destitution on the one hand, and promote cash cropping on the other, have resulted in lowered food production. There has been a steady decline in food production since the early '90s as a result of the thrust towards export-oriented agriculture. The collapse of domestic support for food production (through dismantling the MSP, rising costs of inputs, crop failure due to uncertified seeds) in the late '90s has intensified this shift, as farmers are desperate to recover their losses. The country is already facing a decline in food production to the order of 12.8% in just one year.

The National Nutrition Monitoring Bureau 1997 data shows a declining trend in consumption in Rural India, particularly in cereal and millets, the main source of energy for the poor, from 1990 to 1995. The most important reasons for this decline are:

- Rising food prices
- Destruction of livelihoods
- Destruction of the PDS system
- Shift to export oriented agriculture

Trade liberalization links to a decline in food consumption are even more evident in the sub-Saharan region of Africa. Trade liberalization links to a decline in food consumption are even more evident in the sub-Saharan region of Africa. As a result of loan conditional adjustment and export thrust, five of the six most populous countries of this region (which together comprise 60% of the total population of, the region) have experienced a decline in calorie intake per head even after taking account of net food aid inflows.

In India, the per capita grain availability has been seriously declining since 1995, when WTO's rules started being implemented. In fact, National Sample Survey (NSS) rounds starting from the 38th round have documented the decline in cereal consumption 1992, following the implementation of SAPs.

The reduced consumption on the one hand, and the decline in agricultural production and procurement on the other are directly linked through the Food and Agricultural policies of the government. Colonialism had destroyed the food sovereignty of the country, forcing changes in cropping from food for local and regional food security to commercial crops. Rice particularly had become a commercial crop even within the country.

### **Starvation**

It was Orissa's Kalahandi district in 2001, then Jharkhand's Palamau district in the beginning of 2002 followed by Madhya Pradesh's Shivpuri district and then Rajasthan's Baran district where deaths due to starvation have been reported. In all the cases, it has been either the media or citizen's groups, which have brought these deaths to public notice. Unfortunately, the pattern has been for the state governments to deny that the deaths have been due to starvation. The government of Orissa claimed that people had died because they consumed mango kernels, the government of Jharkhand said that the deaths were due to sickness and old age and the government of Rajasthan has carried its defense to the extreme by stating that people had died because they had eaten a variety of grass which was part of the traditional diet.

The fact is that none of these deaths would have occurred if the people of the area had access to food, as they should have under the Antyodaya Anna Yojana (AAY), which is supposed to provide rice and wheat at highly subsidized prices to poorest of the poor. In Baran district, the identification of the beneficiaries of the AAY could not be completed and the ration shops in many villages did not stock cereals for sale as part of the welfare schemes. The irony is that in many parts of the country the AAY has literally known a lifeline to the citizens at the bottom of the socio-economic ladder.

The report prepared by some NGOs says that 'food for work' programmer and the public Distribution System is dysfunctional in Rajasthan. The issue is not limited to deaths but the means of survival in the villages of Mamoni, Gangapur, Sheharana, Rajpura, Betha, Lalkankri, Bhawanagarh, karwarikalan and Hatiydeh in Baran distrct. Only a lucky few got two chapatis to eat every two days while the rest did not have more than half kg flour which they boiled to make 'lapsi' and ate with one 'vatki' of boiled water.

People in these villages were consuming 'sarna' (wild grass seeds) as they hardly had any food grains with them and now even grass has dried up. People were also boiling 'phang' (a wild green vegetable) and eating its leaves as they have nothing else to consume. Others were seen meat of dead sheep on account of which many fell ill.

When even grass dried up the able bodied villagers started to dig roots of a herb, 'shalavri'. After being peeled and dried these herbs were sold at Rs.5 to 6 a kilogram. A few people were also boiling and drying 'amla' and Bartering it for wheat. As result people were earning a meager Rs.5-6 every two or three days.

In India millions of men, women and children are chronically undernourished. Pregnant women are worst affected, since maternal and foetal under nutrition results in the birth of children with low weight (less than 2.5 kg). Such children are handicapped at birth in brain development - the cruelest form of inequity.

Amidst reports of hunger and starvation deaths, India continues to make room for exporting surplus food grains. That an estimated 320 million people desperately need food, despite more than 60 million tones stocked in the open. There was a proposal to dump it in the sea to make storage space for the next crop, when export market, could not be found for this surplus.

Persons consuming less than 1890 Kcal unit per day may be considered as hungry as the consumption is very much lower than the food adequacy norms of ICMR. About 42 percent of the rural population consumes less than 2430 Kcal unit per day. The average calorie consumption for rural India is 2683 Kcal unit per day. The people with basic minimum calorie intake face long-term ill effects of malnourishment. Calorie deficiency in terms of both spread and depth may be due to higher food prices, lower incomes, lack of assets, fewer work opportunities.

According to study by M.S. Swaminathan Research Foundation, despite millions tones of food stock in the godown, there are people going bed with out any meal. As shown in Table 4.4 there are 16 persons per thousand reporting zero meal in rural India.

Table shows that an average about 945 out of 1000 person get two square a meal in a year. Orissa is reported to have minimum number of people receiving two squares a meal through out the year.

**Table - 1.4 (5) : Per Thousand Distribution of Households by Availability of Two Square Meals a Day in a Year**

| <b>Members of Households getting two square meals a day</b> |                      |                              |                                  |                      |
|---|----------------------|------------------------------|----------------------------------|----------------------|
| State   | Through out the year | Only some Months of the Year | Not getting through out the year | Not getting col. 2+3 |
| Andhra Pradesh  | 966.00               | 17.00                        | 12.00                            | 29.00                |
| Assam   | 901.00               | 61.00                        | 30.00                            | 91.00                |
| Bihar   | 928.00               | 51.00                        | 15.00                            | 66.00                |
| Gujarat   | 976.00               | 9.00                         | 4.00                             | 13.00                |
| Haryana   | 992.00               | 8.00                         | 0.00                             | 8.00                 |
| Karnataka   | 960.00               | 27.00                        | 8.00                             | 35.00                |
| Kerala  | 910.00               | 74.00                        | 4.00                             | 78.00                |
| Madhya Pradesh  | 970.00               | 25.00                        | 3.00                             | 28.00                |
| Maharashtra   | 954.00               | 41.00                        | 4.00                             | 45.00                |
| Orissa  | 844.00               | 149.00                       | 5.00                             | 154.00               |
| Punjab  | 999.00               | 1.00                         | 0.00                             | 1.00                 |
| Rajasthan   | 985.00               | 6.00                         | 0.00                             | 6.00                 |
| Tamil Nadu  | 969.00               | 15.00                        | 9.00                             | 24.00                |
| Uttar Pradesh   | 963.00               | 29.00                        | 5.00                             | 34.00                |
| West Bengal   | 856.00               | 111.00                       | 30.00                            | 141.00               |
| All India   | 945.00               | 42.00                        | 9.00                             | 51.00                |

Source : *Hunger Atlas by M.S. Swaminathan Research Foundation 1994.*

### **Malnutrition**

As an estimate between 40 to 50% of urban women and between 50 to 70 % of rural women suffer from anemia. Unfortunately, efforts at iron supplementation programme and nutrition programme for pregnant and lactating women have not reached the intended populations or prevalence of anemia among women (Gopalan and Shiva 2000) National Nutrition Monitoring Bureau (NNMB) surveys show that even after 50 years of independence, average intake of calories is substantially below the Recommended Dietary Allowance (RDA) for men and women.

Majority of the people in India derive their calories from cereals like wheat, rice, maize, the cheapest source of energy, and not from other sources such as oils, fats, nuts, oil seeds, pulses and

milk which are consumed in minimal amounts because of high-costs. Per capita availability of pulses has decreased from 60.7 gms to 34 gms per day.

Calories and energy are required by the body to maintain body temperature, metabolic purposes, support growth, physical activity and work. RDA for energy is the average requirement and nothing more. The intake and expenditure of energy are extremely finely balanced and any surplus energy consumption is stored as fat and continuous intake results in increased weight. Inadequate weight gain reflects inadequate food intake. A significant section of men and women continue to be at least 5 to 8 kg less than the desirable weight.

Mean intake of 2100 calories by women suggests that 50% of the population is subsisting on deficit diet which is less than 2100 calories. Any decrease in calorie intake results in weight loss or decrease in the activity patterns to conserve energy. Chronic low level of energy intake and increase in the work demand obviously effects women's health and nutritional status negatively. .

This level of calorie consumption was possible because of the cost of food grains influenced by the existence of public distribution system (PDS) agricultural subsidies and subsidies on inputs like water, power in determining the prices of the cheapest source of calorie i.e. cereals. In view of the new economic policies, prices and wages are expected to be determined by the changing market conditions. Withdrawal of subsidies would make even the calories from the cereals less accessible to those without adequate purchasing power. This could result in millions slipping into the category of malnourished. It is significant to point out that 52% of children below the age of 5 years in India are already malnourished. (Gopalan & Shiva 2000)

It is also assume that any availability of food is going to be distributed within the household according to need of the individual family members. Unfortunately, the intra-household distribution of food continues to reflect the gender biases of society. It is the women and the girl children who eat last and least. Intake of protective foods like milk, eggs, meat, fish, fruits and vegetables are adequate only in High Income Group (HIG) and Middle Income Groups (MIG). Dietary intakes of rural women are worse than Low Income Group (LIG) population. Food intakes of all protective foods such as milk, vegetables and pulses are deficient. Nutritional studies indicate that adequate calories and protective foods are assured only to certain income groups. Obviously in general nutritional 'status' tends to be quite clearly linked within economic categories such as class, land holdings wages and household incomes. However other criteria such as caste and ethnic tribal status also lend to be quite significant (Chandra Shekhar and Ghosh 2003)

Any major shift in agriculture in terms of cropping pattern, control of seeds, laws related to patenting of seeds, liberalization of imports of food, oil and grain and increased food processing is bound to affect the subsistence and marginal farmers. The impact will be substantial as 70% of employment for the people in India is in the primary sector. Most people tend to overlook the fact that major part of the farming and agricultural work is done by women. This is despite the absence of a

legal right to the land or the products. They depend on their land for food as well as income for their families and earn wages by working on others lands to feed their families.

In India with 36% of the people living below the poverty and increasing food prices, the low nutritional status for women who already eat last and least get further affected. In a country with large food reserves, the inability to purchase food due to inadequate purchasing power reflected in the poor nutritional status, sometimes resulting in starvation deaths (as in Kalahandi (Orissa), Bundelkhand (U.P), Dhule (Maharashtra) is a matter of great concern. These areas happen to be tribal areas, often drought prone with a high incidence of illiteracy and deep indebtedness and prone to exploitation. The strategic approach has to take these factors into consideration for dealing with such special areas of concern to relieve people of malnutrition and hunger.

### **Debt and Farmers Suicide**

The burden of the agrarian crisis has obviously fallen on the, small and marginal farmers. The rising cost of cultivation, coupled with the risk associated with it, has not only added to the burden on the peasantry but made life uncertain for the poor peasants. A tragedy of unprecedented proportion is unfolding in Andhra Pradesh. According to the Andhra Pradesh Ryothu Sangam (APRS), 279 peasants have committed suicide (between May 14 and June 14 2004) after the Congress government assumed office, however the government has put the figure at 194 (Sridhar 2004).

Unlike the rounds of suicides in 1987-88, 1997-98 and 2000, when peasants growing particular such as tobacco, cotton, chillies and ground nut ruined this time death stalks every where. No crop appears safe and no section of the small peasantry appears insulated. The overwhelming proportions of the death toll is among small and marginal farmers and tenant cultivators, who have no claims on the land they cultivate and who pay exorbitant rents to the landlords.

An increase in the suicide rate in a population is generally known to indicate acute stress that people undergo during a phase of social crisis. Death by suicide is among the most horrible consequence of the policies of the government. What is even more shocking is that the government ignored the repeated cries of distress in the peasantry.

Deep in debt, following periodic losses suffered because of poor crops yields and low prices, farmers sold their kidneys. Highest number of cases has been reported from Rebitachintala Mandal in the Palamdu area (Sridhar 2004)

For March and May are the months when farmers settle old loans and get new ones for kharif crop. This is also the time when moneylenders start recovering their money. With repeated crop failures and high costs of cultivation, the farmers had no money to repay debts. The elections also played a role, money lenders were quiet during elections. Immediately after, pressure began to pile up. There was talk of a moratorium on debt recovery. Moneylenders were in a hurry to get back loans. For heavily indebted farmers, the system cracked up, forcing them to commit suicide (Joshi 2004)

65 farmers in the Vidharbha region of Maharashtra have killed in 2004 over debts as little as Rs. 8000, because when it does not rain and where proper irrigation facilities do not exist, these small amounts crush hope and with it life. Thirty committed suicide in just June alone, very often, the family of the suicide victims do not have money to arrange for the last rites (Chaudhru 2004)

Farmers had pawned their houses, cattle; some even the wife's mangalsutra to borrow money but it was finally vanishing that broke their spirit. Since 2001, about 340 farmers have committed suicide in the region of Vidharbha (kappikar 2004).

It is becoming evident that nothing but a reversal of the agrarian and agriculture policies pursued in the past decade or so under the garb of liberalization, will stem the curse of death. While politicians and bureaucrats waffle on what the peasant actually needs, the issue of an unqualified moratorium on repayments of loans by small peasants - whether from private or institutionalized source has become a life and death question. This will determines whether the lives will be saved in the days ahead.

An increase in the suicide rate in a population is generally known to indicate acute stress that people undergo during a phase of social churn. Death by suicide is among the most horrible consequences of the policies of the government. What is even more shocking is that the government ignored the repeated cries of distress in the peasantry. More pertinently, the phenomenon of suicides among sections of the peasantry - not only in Andhra Pradesh, but also in Karnataka, Punjab, Rajasthan, Maharashtra and Kerala indicates that the Indian peasantry is going through a deep churning. It is also obvious that this churning has been caused by the neo-liberal prescription for agriculture.

The Indian government celebrated its triumph in Cancun, but the negative impact of globalization on agriculture through the World Trade Organization regime has already compounded the agrarian crisis brought in by drought. Several agricultural commodities have seen a fall in the prices in the last three years owing to imports.

The lifting of agricultural and power subsidies have pushed up the cost of cultivation substantially and the withdrawal of safety nets like the universal public distribution system for food has increased expenditures for poor families.

The burden of irredeemable debt has eroded the living standards of those who are already poor, throwing them to the mercy of moneylenders, and depriving them of their dignity and standing in the rural society. The noose is already around the neck of the farmer.

Farmer's suicides are no longer a feature of drought prone and economically backward districts. The phenomena have spread to all regions including prosperous agriculture belts like Mandya. While 49 suicides, the highest figure recorded, took place between April 1 and October 25 in drought prone Hassan district, during the same period 22 suicides took place in Mandya, the state's sugar bowl and heartland of Cauvery irrigation network. Eighteen suicides were committed in Shimoga, a paddy-

growing district of high rainfall. Fourteen farmers ended their lives in Heveri district, which has normal rainfall.

The phenomenon of suicides amongst farmers in Karnataka has been a recurrent theme in agricultural sector since 1998. The sudden and alarming spurt in suicides since April 2003, however appears to indicate a new trend and pattern. Farmer's suicides are no longer a feature of drought prone or the economically backward districts alone, and nor are they occurring only in pockets of high investment agriculture like cotton growing tracts.

The pressure from moneylenders to repay loans appears to drive farmers, particularly the small and marginal farmers, to take their own lives. Loans from institutional lending sources typically account for just 10 per cent of a small farmers' credit needs and there appears to be little evidence of banks forcing their creditors to repay their loans. For example, in Heveri district, the percentage recovery of loans to agriculture by banks was 49 per cent, 44 per cent and 47 per cent respectively during the last three years. All banks have rephrased their loan and interest structures. The disbursements of banks are going down, as farmers are unable to repay loans because this is the third year of crop failure.

Unable to get the loan from banks, farmers have been forced to borrow from moneylenders at the exorbitant rate, which usually vary from 24 to 60 per cent per annum, sometimes even at higher rate. Though the coercion by the moneylenders rarely has taken the form of physical assault, but the pressure always continue. Moneylenders come in the form of a group and harass the debtor that results in considerable loss of face and self-esteem for the latter. After the suicide, the family of the victim does not disclose the identity of the moneylender, usually a large landlord. As there are no generally written agreements between the moneylender and the victim that makes it difficult to punish those who practise usury.

In Mandya, there has been a spate of suicides largely in Maddur Taluk, though Mandya is relatively an agrarian prosperity. But due to the low storage capacity of dam in the cauvery basin, farmers had to dig bore wells, which unfortunately failed. Following are the few case studies of the farmer's suicide in Mandya, Bangalore Rural and Hasan districts.

Boraih aged 55 years of village Gunnanayakandahalli in Mandya district committed suicide on 6 September 2003. He has borrowed more than one lakh from friends and moneylenders, besides a loan of Rs. 45,000 from Syndicate Bank. His elder son died four months back. He received no compensation from the government. His last rites were conducted by the contribution of Rs. 6,000 from friends, villagers and relatives. Now, the main breadwinner is the daughter-in-law.

Similarly, H. K. Hanumme Gowda of Bidarhasahalli Village committed suicide on 12 August 2003. He had borrowed money from Vijay Bank, PLD Bank and other institution of Rs. 55,000. He had 70 trees of mango, which died up due to drought. Now family does not have any source of income, and finds it hard to find any breadwinner. His wife is seeking help for the education of the children.

The case of Puttaswamy of village Bidarahalli in Maddur Taluk of Mandya is not different. Having only three acres of land he has taken loan of Rs. 26,000 from the Cooperative Society and Rs. 50,000 from moneylenders. No compensation was received, and last rites were carried out with Rs. 25,000 donated by Abbas Ali Bohra, a social worker from Channapatna.

Kadi Gowda of Huligerepure in Mandya, who was around 70 years old, hanged himself due to reported failure of crops since last three years. He has the loan of more than one lakh of which Rs. 80,000 was from private parties. He also collected the loan for the marriage of his daughter. It is one of the few cases where the deceased is able to get Rs. one lakh compensation from the government.

There is a case when the eldest lady of the farmer's family committed suicide when all her efforts to seek the loan for agriculture from government turned futile. Smt. Chenamma of village Valagerehalli of Muddur Taluk in Mandya district hanged herself in front of the house. She had borrowed heavily from private sources. No compensation has been paid since the land was 'not in her name. If compensation were paid, her son would like to spend the money on the education of his children.

Due to pressure of loan repayment, Puttaswamy Gowda of Chikannadodi village of Channapata Taluk in Bangalore rural district committed suicide by consuming poison. He had borrowed around Rs. 20,000 from State Bank of Mysore and around Rs. 160,000 from moneylenders. Family cultivates betel leaves by paying Rs. 20/hour from others tubewells. Karnataka government has sanctioned compensation of Rs. one lakh. Mrs. Sonia Gandhi also paid Rs. 25,000.

The study conducted by RFSTE unambiguously shows that growing indebtedness in the rural areas among the farmers is the main reason for the farmers to commit suicide in Karnataka. Almost all the farmers who have committed suicide have taken the loan, which costs more than their total land assets. Situation became worst when the government institutions stopped giving loan to the farmers. While there are varieties of reasons, indebtedness is the common factor in all the suicides. Over 400 farmers in the states have committed suicide between April 1, and October 25 in 2003. By the end of November 2003, the number of suicides increased to 478. With 54, Hassan tops the list followed by Mandya and Belgaum.

However, according to a report, nearly 500 farmers have committed suicide in Karnataka during 2003 till the midweek of October 2003.

**Table - 1.4 (6) : Suicidal Deaths of Farmers in Mandya, Bangalore Rural and Hassan Districts**

| Sl. No. | Name of the Deceased | Age | Village              | District        |
|---------|----------------------|-----|----------------------|-----------------|
| 1.      | Boraih               | 55  | Gunnanvakanhalli     | Mandva          |
| 2.      | Hanume Gowda         | 35  | Bidarhosahalli       | Mandva          |
| 3.      | Puttaswamv           | 48  | Bidarhalli           | Mandva          |
| 4.      | Kadi Gowda           | 70  | Huligerepura         | Mandya          |
| 5.      | Chennamma            | 60  | Valagerehalli        | Mandya          |
| 6.      | Puttaswamv Gowda     | 55  | Chikkanaddi          | Bangalore Rural |
| 7.      | Basve Gowda          | 60  | Jagadpur             | Bangalore Rural |
| 8.      | Puttalinge Gowda     | 45  | Eggalur              | Bangalore Rural |
| 9.      | Puttaswamy           | 34  | Hosakapau            | Hassan          |
| 10.     | Lakkegmida           | 45  | Kandali              | Hassan          |
| 11.     | Chennapasan          | 70  | Harnihalli           | Hassan          |
| 12.     | Shivanane            | 50  | Geejahalli           | Hassan          |
| 13.     | Somshekhar           | 40  | Bendekere            | Hassan          |
| 14.     | Basvaraju            | 30  | Hiriyur              | Hassan          |
| 15.     | Chandrappa           | 60  | N. Bendihalli        | Hassan          |
| 16.     | Shiva Swamy          | 40  | Halbagenehalli       | Hassan          |
| 17.     | Hemaji Naika         | 45  | Margenduhalli Tandya | Hassan          |
| 18.     | Lokesh               | 40  | Belawalihalli        | Hassan          |

At an estimate, the Punjab farmers are under debt of a whopping amount of Rs. 10,000 crores. The indiscriminate use of chemical fertilizers and insecticide is eroding the fertility of the land, thereby causing unprecedented loss in natural productivity. A report by Indrajeet Singh Jeji, a former MLA and president of Human Rights Organization, says that almost 500 farmers have so far committed suicide in the state. According to Jeji, Lehra and Andana blocks of Punjab alone accounts for about 174 suicidal deaths till June 2003. Farmers, having less than even one acre, are burdened with the debt from Rs. one lakh to 11 lakhs. Some of them jumped in front of the railway tracks while others set themselves on fire, but majority of them poisoned themselves.

One of the main reasons is the collapse of nuclear family in Punjab, which has affected the land holdings. There is severe slump in the earnings of the farmers, which is further adding to their debts. Now, the farmers view agriculture as a loss making occupation, and the realization is causing intense pressure among them.

**Table - 1.4 (7) : Suicides by Farmers in Karnataka (1 April to 10 November 2003)**

| <b>Sl. No.</b> | <b>District</b>   | <b>Cases Reported</b> | <b>Cases Rejected for Compensation</b> |
|----------------|-------------------|-----------------------|--|
| 1              | Bagalkot          | 16                    | 13                                     |
| 2              | Bangalore (Rural) | 22                    | 07                                     |
| 3              | Bangalore (Urban) | 02                    | 0                                      |
| 4              | Bldar             | 20                    | 09                                     |
| 5              | Hassan            | 54                    | 32                                     |
| 6              | Chamarai Nagar    | 08                    | 01                                     |
| 7              | Haveri            | 26                    | 19                                     |
| 8              | Uttara Kannada    | 03                    | 0                                      |
| 9              | Dharwad           | 17                    | 13                                     |
| 10             | Koppal            | 15                    | 10                                     |
| 11             | Mandya            | 38                    | 27                                     |
| 12             | Chikmagalur       | 15                    | 08                                     |
| 13             | Raichur           | 04                    | 02                                     |
| 14             | Tumkur            | 27                    | 15                                     |
| 15             | Shimoga           | 27                    | 19                                     |
| 16             | Kolar             | 11                    | 05                                     |
| 17             | Mysore            | 13                    | 09                                     |
| 18             | Udipi             | 01                    | 01                                     |
| 19             | Kodagu            | 03                    | 0                                      |
| 20             | Belgaum           | 34                    | 24                                     |
| 21             | Davangere         | 33                    | 29                                     |
| 22             | Bellary           | 26                    | 17                                     |
| 23             | Chitradurga       | 31                    | 20                                     |
| 24             | Gulbarga          | 03                    | 02                                     |
| 25             | Bijapur           | 13                    | 10                                     |
| 26             | Dakshin Kannada   | 08                    | 02                                     |
| 27             | Gadag             | 08                    | 05                                     |
|                | <b>Total</b>      | <b>478</b>            | <b>299</b>                             |

They accuse the State Chief Minister Captain Amrinder Singh of backing out of his earlier poll promise of providing bonus of Rs. 30 per quintal on crops in three instalments. The payment of instalments was restricted to certain pockets of the state, and that too at meager rate of Rs. 10, somewhere only Rs. 5.

Punjab is hailed as the launching pad of Green Revolution in India; but pathetically, the farmers of Punjab are facing a debt burden of thousands of crores. Adverse residual effects of irrational application of synthetic fertilizers and plant protection agro-chemicals have decreased the fertility status of the soil. Desperate use of these inputs not only falsified their hopes for better yield but also crippled them financially and the resultant frustration induced them to commit suicide. Increasing cost of production and decreasing productivity are proving most damaging. The situation prevailing in eastern UP, Bihar and Orissa is no better.

It puts a big question mark on the entire concept of planning for agro-rural development in the country. Agriculture, which sustains the national economy, is still the most neglected sector on the priority list of national development. It is amazing how the Central or the State government can afford to remain insensitive to the increasing cases of suicides committed by farmers. It hurts one's sensibility that even a tragic situation like this is not enough to put our policy makers and planners to shame.

The genesis of the recent economic crisis in Punjab lies in the distorted structure of its economy and disarticulated 'agro-cultural' social change. The net barter terms of trade (at 1970-71 = 100) between foodgrain and manufactured products was 93.64 in 1971-72 and it deteriorated further to 85.48 in 1990-91. Thereby, this unequal market exchange also tends to weaken the socio-economic position of the rural households, dependant only or mainly on agriculture as cultivators and farm wage workers.

According to a study in Punjab small and marginal farmers and landless labourers were more prone to suicide. 45.2 per cent of the total suicides are by landless labourers, 24.5 per cent are of small farmers, and 18.8 per cent are by marginal farmers. About 18 per cent report indebtedness as a cause of suicides.

A study by the Agro Economic Research Centre (AERC) of the Punjab Agricultural University (PAU) on the indebtedness of farmers, done for the Ministry of Agriculture, threw up some shocking facts. According to the study, the small and marginal farmers are the largest number; their holdings are small in the state and get merely 27.02 per cent of the total agricultural credit. Here too, the process is marred with wrong selection of beneficiaries, improper monitoring and less promising purposes for which the loans are being advanced, defeating the national objective of providing low-cost credit to this groups.

There are 1706 banking institutions including 942 commercial banks in the rural areas of the state which have raised deposits worth Rs. 12,254 crores and advanced about Rs. 6,000 crores as loans to agriculture sector. The share of certain thrust sectors like dairy and poultry, besides fisheries

has decreased in the last three years, and what to talk of diversification. Centre, some time ago, had directed the state to suggest measures so that a national policy could be drafted to benefit the marginal farmers whose conditions are deplorable even after half a century of independence. The study recommended to the state government and centre to adopt the Self-Help Group (SHGs) strategy to provide low cost credit to the small and marginal farmers, most of whom largely are dependent on the commission agents and moneylenders for their credit needs.

Despite an increased flow of credit in the state, crop loans still constitute more than two-thirds of the agricultural advances. Incidentally, there has been a decline in the proportion of advances made to crucial sectors like minor irrigation from 2.82 per cent to 1.09 per cent, land development from 0.47 per cent to 0.38 per cent, farm machinery from 16.83 per cent to 11.67 per cent, dairy farming from 5.37 per cent to 4.90 per cent, and poultry from 1.58 per cent to 0.87 per cent.

It is interesting to note that commercial banks take nearly 15 days to process a loan against seven days by cooperative banks. But the informal sectors, i.e., moneylenders and commission agents process loan within half day.

Similar situation is prevailing in West Bengal unable to bear the soaring interests on bank-loans, over 80 farmers have ended their lives in the last three months in 2003 in West Bengal. Most of them hail from the rice-yielding districts of Burdwan and Bankura. Over 1,000 have killed themselves in the past year.

Paradoxically, Burdwan, where most of the deaths have been reported, is known as the 'rice bowl' of the East. The farmers are unable to meet the 16 per cent interest on loan charged by the public sector banks. Even the few micro-finance institutions have failed to perform, forcing the farmers into a vicious debt trap."

What was acted as a double whammy for farmers is the poor price for their yields in the open market in the wake of a bumper harvest in the neighbouring states and cheap imports from South East Asia, and the late reaction of the State Government in offering the minimum support price. A sluggish jute market following the advent of an all-devouring plastic industry has prevented the Jute Corporation from Uft1ng the stocks in time, complicating the situation further. However, according to Nirupam Sen, the State Industries Minister, "Reports that the farmers are committing suicide due to bank loans are not fully true. Why should the farmers of Burdwan commit suicide when they are far better off than farmers of many other districts.

The West Bengal Left Front government's much-eulogized programme of land reform - a key to its electoral success for more than two decades, is regressing under the impact of liberalization. Small and marginal farmers, who were the main beneficiaries of land reform, are victims of the fallout. No longer are they the instruments of social and economic change and productivity that they had been till recently. The gradual withdrawal of state subsidies for inputs such as fertilizer and seeds and the rising irrigation costs are making farming unaffordable .for small and marginal farmers, who form 76 per cent of the agricultural population and operate 60 per cent of the cultivable land.

Small and marginal farmers are forced either to sell or give land on lease to the rich class. This is not only swelling the ranks of land-less agricultural workers but has also begun negating the gains of land reforms. According to a report, in Burdwan, 60 per cent of 224,051 patta holders owning about 80,000 hectares of vested land under the governments land reforms programme have been forced to sell off their uneconomical holdings. The buyers are mostly big landholders or the new rural rich who have been investing heavily in farming.

In fact, there is growing penetration of the capitalist mode of production in the agriculture. Already several multinational companies engaged in food processing industries have been making bids to buy vast tracks of good farmland in the state. Considering the present policy of the centre, keeping these companies out of agriculture is just out of question. On the contrary, the process will get expedited in the coming years. The rise in production costs has pitted the small and marginal farmers in an unequal race. It is like asking a physically disabled person to run against Carl Lewis. As long as the prices of input were heavily subsidized and controlled, small farmers could somehow manage to eke out their livelihood from their land. Now, their land is either getting sold or being taken on rent by rich landlords.

In Burdwan, a new class of rich farmers known as waterlords has also emerged following the scarcity of DVC water and falling levels of sub-soil water in the district. Owing to electrically operated submersible pumps, the waterlords earn large amount by selling high priced water to farmers. The small and marginal farmers cannot afford this price. These farmers, whose holdings are adjacent to those of water lords, are being forced to lease out their land to them.

#### **b. Change in Distribution System and Dismantling of P .D.S.**

Off take of grain under Public Distribution System (PDS) has been very low and has added to India's food insecurity. During the April - September period in 2002 the off take from ration shops for wheat was a dismal 18.09 percent and only slightly better at 25.75 percent for rice. In September, the wheat and rice off take was a mere 15.3 and 24.7 percent respectively. The corresponding figures for families above the poverty line is dismal to say the least at 6.2 and 5.5 percent respectively, indicating that states are hardly using P.D.S. In case, below poverty line (BPL) families, the figures are slightly better at 45.5 and 50.3 percent respectively. Ironically, bulks of stocks lifted from the Central Pool are for exports while there is a paradox of hunger within the country.

Food insecurity and hunger is not restricted to any particular state and is an endemic national problem with many families not having money to even purchase wheat and rice at Antyodya rates of Rs. 2 and Rs.3 per kg respectively. As a result they mortgage their ration cards for a pittance and are deprived of access to the P. D.S., while the centre on its part is replenishing food stocks in vulnerable areas using rural transport service.

It is a systematic failure irrespective of who is in power in. Center or State and has to be addressed by taking corrective measures including not only disbursal of ration cards to the tribals, but

also ensuring that they are neither mortgaged or used for making bogus entries while the poor do not get their due ration.

On Oct. 10, 2002, Sharad Yadav, the then Minister of Consumer Affairs, Food and Public Distribution, ruled out any impact of drought on the export of food grains from the country. India has seen the worst drought in 2002 in many years, and state after state were forced to admit that thousands were dying of starvation. Millions of Indians go to bed hungry, as the government has dismantled the PDS system, and taken affordable food out of the reach of millions.

The wheat which the poor and the hungry are unable to purchase at Rs 4.30 per kilo for those below the poverty line, and at approx. Rs.7 for those above it (mostly those on the borderline of poverty), is then exported through middlemen like Cargill who are given this wheat at concessional prices, often below the price at which the poorest have to buy the grain.

Food grain export is liberalization's answer to the problem of over procurement from farmers even while it will bring in much needed foreign exchange. However, ever since Indian agriculture was subjected to liberalization, both the share of agriculture exports in India's total exports as well as their value in hard cash has actually declined.

Unlike the European countries where the public distribution system (PDS) was discontinued after the Second World War, its importance has grown for an over populated and poverty-stricken country such as India. It was with the basic objective of curbing consumption and ensuring an equitable distribution of available food supplies especially in the deficit areas and among the poorer strata of society, that the PDS was introduced more than fifty years ago.

Internationally, food is being traded by powerful multinational companies. By passing on the reins of the nations food security to these companies and the trading blocks through a policing system under the WTO. India is witnessing a gradual collapse of food self-sufficiency and the scrapping of the public distribution system, the very foundations of food security.

What is being forgotten is that a developing economy, such as India's needs a food security system that looks much beyond management of scarce supplies and critical situations. Food security systems are evolved as an integral part of a development strategy bringing about a striking technological change in food crops, providing effective price and market support to farmers and deploying a wide range of measures to generate employment and income for the rural poor to improve their level of well-being, including better physical and economic access to food grains.

Food security, therefore, can only be ensured if the developing countries have provisions and powers to re-enforce quantitative restrictions. No amount of tinkering with suitable clauses on market access, domestic support and export subsidies is going to serve the food security needs of the developing countries. As long as the subsidies - both explicit and implicit - are not brought down to zero in the developed world, the developing countries should have the provision to continue with the quantitative

restrictions. After all, border protection is the only way for the developing countries to avoid being inundated by cheap and highly subsidized food and agricultural commodity imports.

### **Food grain exports: redirecting subsidies from farmers to traders**

The push towards exports is neither aimed at helping farmers of the nation's finances; rather, in accordance with the impetus of WTO's Agreement on Agriculture, it is a way of diverting support away from farmers towards traders. While the government dismantles procurement and public food distribution because they are considered subsidies to the people of the county, and are supposed to distort trade, it allows traders to buy bulk grains from its godowns at prices even lower than those offered to the poorest of the poor; the difference is borne out of public money.

The annual budgets since liberalization having been adding to the subsidies for the corporate sector - tax holidays for building silos and cold storages, incentives for exporting, subsidized transportation to the ports of the trader's choice. The recently announced 5 year export policy of the government has allocated Rs. 100 crores towards aided corporations transport grain from FCI to the ports. In addition, public money is used to take land away from farmers to build transportation facilities for agri-business to help them transport the grain even faster.

The experience of the 2001 wheat export exposes the government's lack of commitment to its people. As against an economic cost of Rs.8300 per tonne to the FCI and an open market price of Rs. 7000 per tonne. India was offered a price of Rs.4300 per tonne in international market in May 2001. The 20, 000 tonne Philippines order bagged by Cargil was met through wheat sold to the multinational at the BPL rate.

However, the "existing attractive rates" were further reduced with subsidies to the corporation, whose financial capital is greater than that of many less developed countries. Over and above selling the wheat at the BPL rates, the government agreed to bear the freight charge from Rajpura to Jamnagar port in Gujarat and pay a commission to Cargill. Thus, wheat whose cost to the government included the MSP (Rs.580 of 2000) as well as the commission, market charges, levies and cess paid by FCI, increasing the real cost by another Rs.70 a quintal, was sold at less than Rs.420 a quintal giving the corporation a subsidy of Rs.130 a quintal.

In fact, since 2000, Cargil has emerged as the biggest buyer of subsidized wheat being pushed by India into world markets. Cargill picked up 7.5 lac tones of Indian wheat between December 2000 and January 2002.

### **Removal of Quantitative Restrictions (QRs)**

On 1st April 2001 India completely removed the Quantitative Restrictions (QRs) on imports from all 1429 items as per the bilateral agreement with the United States, Quantitative Restrictions on imports in respect of 714 items have already been removed with effect from 1st April 2000. This formed part of the Export and Import (EX 1M) Policy announced in New Delhi on 31st March 2000.

The QR's from the rest of 715 items (actually 751 in the notification 2 of 31st March 2001) has been removed on 1st April this year.

QRs were being maintained ever since 1947 on balance of payments (BOP) grounds under the General Agreement on Tariffs and Trade (GATT) to which India was a signatory. India participated in the 7-year long Uruguay Round Negotiations (1986-1993) which culminated in the signing of the Uruguay Round Agreement in April 1994 and became a founder member of the World Trade Organization (WTO), which came into being in January 1995. India subscribes to all the WTO Agreements, but continued to maintain QRs on BOP grounds as per the provisions of Article XVIII-B of GATT. Till 31st March 2000 the quantitative restrictions were maintained on balance of payment ground on 1429 items out of which 700 items were under Restricted List, 685 items were under SIL (Special Import License) list and there were 44 items under Canalized list. In April 1999 about 1285 items were already shifted to the open general license (OGL) list.

Imports have been restricted by countries on various grounds for environmental and ethical reasons and reasons of public order. For the Third World in particular the issue of Balance of Payments and scarcity of foreign exchange has been a major reason for restricting imports. Such restrictions are permitted under Article XI of GATT, which allows such restrictions as quantitative restrictions.

According to the commitment given by India to the developed world, we had time till 2003 to remove all quantitative restrictions. This commitment had been accepted by countries like European Communities, Japan, Canada, Australia, New Zealand and Switzerland. Yet India entered into a bilateral agreement with US on 28th December 1999, which hastened the removal and set a definitive timetable.

With full knowledge of how severe the impact of the removal of restrictions on imports would be, the government of India asked Washington to announce this so-called "agreement" only after Indian Parliament went in recess, to avoid democratic debate on such controversial issue. The Financial Times, the US government was asked to delay" the formal announcement till after the Indian Parliament had gone into recess because the government feared the sensitive issue could cause a fear among law makers eager to make political capital out of the issue".

The flooding of Indian markets with 1,429 products, whose import was restricted to conserve scarce foreign exchange, and protect jobs and livelihood, will have a devastating impact on the Indian people, women and the Indian economy. Most items in the restricted list are agricultural products, items produced in the smallscale household ,sector and animal products. Among the unrestricted imports are carcasses and animals waste parts that create a threat 'to our culture and our public health. It also includes fish, milk, coconut, coffee, spices, tea, ragi, bajra, neem products and even Basmati. This flood of imports will leave no aspect of the Indian economy untouched. The forced removal of restrictions on imports will induce high levels of cruelty against poor farmers and workers in the informal small sectors whose livelihoods will be snatched away by mass-produced industrial products. The dumping of meat products will also increase cruelty to animals as most animals are

slaughtered faster to create global meat markets especially in predominantly vegetarian societies like India.

### **Impact of the Removal of QRs on Agriculture and Farmer's Livelihood**

Out of the 715 items from which QRs have been lifted from 1st April 2001, 147 items are agricultural and dairy products. The removal of QRs on agricultural commodities makes them vulnerable to global market prices and global competition. Global commodity prices are extremely volatile and in any case do not represent true competition on the basis of production costs, because these markets are controlled by global traders like Cargill who receive overt and covert government subsidies from both exporting and importing governments. The current fall in commodity prices in the global market is already being reflected in the country's domestic prices. The unrestricted access to the Indian market given to the US through the US-India deal on unrestricted imports will threaten the lives and livelihoods of farmers, weavers, retailers and workers in every sector.

The quantitative restrictions have been removed at the time when the agricultural crisis created by farmers' debts, removal of subsidies, corporate seed failures is forcing thousands of farmers to commit suicide in Punjab, Andhra Pradesh, Karnataka, Maharashtra and other parts of the country. Thousands more are being forced to sell their kidneys and other body parts in order to survive. Adding to this crisis is the government's decision to dismantle the Food Corporation of India so that corporations can move into the procurement and distribution sector. Even as farmers are reeling under the drastic fall in procurement price, the government is subsidizing corporations for building silos, cold storages and transportation facilities including ports through tax holidays, low interest rates, better credit facilities and subsidizing infrastructure costs.

Though the government boasts of protecting Indian farmers and their interests but vast difference between the bound rates of the key agricultural commodities and the custom duty levied on them by our government shows its indifferent attitude towards our farmers. On almost all the edible vegetables and roots and tubers e.g. potato, onions, garlic, leeks, cauliflower's, broccoli, carrot, turnips, cucumber, leguminous vegetable, mushrooms, beans, spinach and others, the bound rate of duty is fixed at 100% and the basic custom duty is only 35%. Again on edible fruits and nuts the bound duty limit is 100% while the custom duty on a large number of items under this category is only 35%-40%.

On tea and coffee the bound rate of duty is 150% and the total custom duty fixed on these items is only 76.80%. On spices e.g. pepper, cloves, nutmeg, mace and cardamom etc., the maximum bound rate of duty is 150%, which is generally on the crushed or grounded spices, and on whole spices it is 100%. However the basic custom duty on almost all spices is fixed at 35%.

On cereals the situation is very scary. There is 0% bound duty on maize, rice, sorghum etc and the custom duty on these items varies from just 50% to 80%. Rice with a broken rice percentage of 50% or more has no duty on it. This will push up rice imports at the time when the government is dismantling Food Corporation of India (FCI) on grounds that there is too much rice in its stores.

Besides that there are several items with nil (0%) custom duty, e.g. Rye, Barley, Oats on which the bound duty is 100%.

Similarly, dairy, livestock and poultry are major agricultural activities which is not only generate employment but are also a formidable source of regular income throughout the year. The removal of QRs on dairy products would hit hard the dairy activities in the state. The basic custom duty limit on all these items is 35% and the total duty limit is 40%. However on buttar and other fats and oils derived from milk, cheese and curd, the bound rate of duty is 40% and the basic custom duty is 35%. On milk and cream, concentrated or containing added sugar or other sweetening matter the bound duty limit is just 0% but custom duty is fixed at 35%60% in case of concentrated milk and cream. (RFSTE 2003)

In Punjab the impact of QR removal is quite apparent. There the rate of the milk was Rs. 14-15/liter in the beginning of 2000. Generally the price of milk goes up during summer every year. But with the spread of news of cheap milk import, the milk prices went down to Rs. 9-10/liter.

The removal of import restrictions from poultry meat and egg products will have a serious impact on the domestic poultry industry. Though the present rate of duty on the poultry items is 100% as against the bound duty of 150%, yet this would not check the dumping of cheaper imported products. The price of chicken has already come down from Rs.100 to Rs.55-60. Indian poultry industry and farmers are particularly afraid of dumping of cheap chicken legs, which is considered a delicacy here, unlike in most western countries, where the leg meat is virtually considered as a waste matter to be dumped at throwaway prices in developing countries.

Removal of import restrictions on vegetable seeds will lead to surge in seed imports by multinational seed companies. Yet another danger of unbridled seed imports is the threat to the environment posed by GE seeds. Indian soils are already heavily contaminated with agricultural chemicals, as are foods, thanks to the technology of the Green Revolution. GE seeds, such as Monsanto's Roundup Ready seeds, will intensify the use of herbicides, while their Bt seeds will create plants that continuously produce poisons. In the recent Monsanto vs. Percy Schmeiser case in Canada, the corporation agreed that the use of GE seeds on one farm can contaminate the seeds and plants of neighbouring farmers through cross pollination, wind and other factors.

The same case has provided evidence of how Monsanto's Roundup Ready rapeseed has displaced practically all the native biodiversity in rapeseed and its related varieties, both cultivated and wild. The use of such seed can have a devastating effect on Indian agriculture, where the majority of farmers are small and marginal farmers, who depend upon agricultural biodiversity for their livelihood.

In addition, these seeds are patented. In fact, the Monsanto vs. Percy Schmeiser case has also set a historical precedent that decrees that farmers whose seeds were contaminated with GE patented seeds with or without their knowledge, cannot use or sell the crop as it belongs to the patent holder. Rather, they will be fined heavily for not having paid royalty to the company. In a country, where farm

sizes are small, contamination is bound to occur, and the already debt-laden farmer will be forced into further deprivation or suicide. (RFSTE 2003)

The threat of GE seeds to the environment is so great, that in March 2001, Italy's Minister for Agriculture ordered checks of 21 seed companies in a campaign against illegal GE material. The suspected seeds were imported by Monsanto and were already distributed to retailers. Italy has forbidden the use of GMO seeds in open fields. This ban exists in most EU countries. Thailand is the first Asian country to ban GE crops. Australia is also planning a general moratorium and more stringent regulations on GE crops. The worldwide resistance by farmers to GE crops is so strong that GE cotton was introduced into Indonesia under military protection.

As against the low Indian custom duty on the agricultural products, the average tariff in OECD countries in 1995 were 214% for wheat, 97% for barley, 154% for maize. Their tariff peaks reach 350% and above in extreme cases for some products of interest to developing countries. The most important areas with highest tariff rates include the major agricultural staples - cereals, meat, sugar, milk butter and cheese as well as tobacco products and cotton. In EU, for instance, the out of quota tariff for bananas is 180%; in Japan these tariffs range between 460% to 600% for dried beans, peas and lentils and in the US groundnuts in shell attract a tariff of 164%. Recently Japan has levied a tariff of about 1000% on rice. However in India the bound rate duties for rice and maize was fixed at 0% many years ago.

#### **Impact of Removal of Import Restrictions: Collapse of edible oil sector**

The most damaging impact of liberalization has been on the edible oil industry. The duty on the crude edible oil was reduced to 15% in August 1998 and only in June 2000 it was raised to 25%. This led to the closure of hundred of small-scale ghanies, oil mills and expellers.

In 1999-2000 the custom duty on edible crude oil was 16.5% while on the refined edible oil the duty was 45.5%. It was raised to just 75% and 85% respectively in the Financial Budget 2001-2002, even though the bound duty limit for edible oils (except soya oil) is 300%. Even sick vanaspati units can import Crude Palm Oil (CPO) at only 55% duty.

The heavy import of Palm oil has not only affected the mustard growers but domestic soya growers too. In fact, soya growers are in a worse position, as the bound rate for tariffs is only 45%. Under the Financial Budget 2001-2001, the tariff for crude soya oil is even lower at just 35%. The major producers of soya Argentina, Brazil and USA have had bumper crops. As Europe and Japan, the major importers of soya, have rejected American soya because it may contain genetically engineered soya, the ground is being laid for dumping this potentially hazardous product into India.

The impact of import liberalization is in terms of market and price destabilization. The W.T.O language of "surge" in imports fails to reflect the fact that even small quantities of artificially cheap imports can perturb domestic markets and domestic prices. Even high value crops like spices, tea and coffee have witnessed collapsing prices.

Without adequate safeguards of support our farmers have to deal with the destabilization of prices, which occurs long before a surge of imports of agricultural products. Most items on the restricted list of imports on which QRs are now being removed are agricultural products, items produced in the smallscale household sector and animal products. The removal of restrictions on imports greatly impact small farmers and workers in the informal small sectors whose livelihoods will be snatched away by mass-produced industrial products.

Though it is argued by the Government that tariffs or duties would be used to restrict imports, the factual situation believ this assurance. The crisis faced by the domestic edible oil sector is another example. After removal of import restrictions in 1998, there has been a reduction in the import duties on edible oils from 65% in 1995 to approximately 35%, this has resulted in massive increase in oil imports. Imports of soyabean oil have increased from 2,36,000 tonnes in 1997 - 98 to 8, 00, 000 in 1998-99. In 2000, 5500, 000 tonnes of foreign palm oil, soyabean oil and animal fat was imported. By 2002-2003, India was importing \$940.0 million dollars worth of edible oils.

The mustard produced by our farmers, which was selling at Rs. 2,000/- per quintal a year, is today not even selling for Rs.900 per quintal. The production of mustard seeds fallen by 65%and over 60% small oil mills and ghanis have been closed down, rendering lacks of people unemployed.

Similarly, soya bean and palm oil have flooded the Indian market, destroying the domestic edible oil economy based on coconut, the mustard, the groundnut and the sesame. This is why coconut farmers in Kerala blockaded the Cochin harbour and groundnut farmers in Sirsi, Karnataka and Soyabean farmers in Mutlai, M.P. protected and were shot at.

In any case, price collapse is not a linear mechanical phenomenon dependent on percentage of imports. It is more appropriately described in terms of non-linear perturbation in a complex system into chaos and disintegration.

Therefore, even in the case of products where the imports are low, removal of import restrictions have sent the domestic prices into a downward spin, leaving the producers in crisis, and the agricultural economy in shambles.

### **Lowering of Price Farm Prices due to Dumping of Subsidized Produce and fall in Income**

#### **Dumping by U.S.A and Other Developed nation**

The proactive of selling cheap products abroad at prices below the cost of production is called 'dumping'. Agriculture dumping has made, it impossible for many Third World producers to thrive, even in their national markets. In conjunction with the export oriented conditionalities of structural adjustments imposed by the IMF and the World Bank, which have obliged many governments to convert their domestic food production to agro industrial commodity crops in order to generate the foreign exchange with which to pay their debts, dumping has made developing countries dependent upon food imports- and extremely vulnerable to fluctuating prices in the world marketplace.

Since Bretton Woods, dumping has been considered illegal. Article VI of the original GATT agreement defines and condemns dumping, as can be seen in the text below. Article XI in the original GATT text permits governments to adopt domestic supply management, even allowing restrictions on imports, that might favour domestic producers, in order to control production levels and avoid the temptation to export surpluses and to relieve 'critical shortages of foodstuffs'.

General Agreement on Tariffs and Trade (1969). Article VI, Paragraphs 1 and 2 : Anti-dumping and Countervailing Duties.

1. The contracting parties recognize that dumping, by which products of one country are introduced into the commerce of another country at less than the normal value of the products, is to be condemned if it causes or threatens material injury to an established industry in the territory of a contracting party or materially retards the establishment of a domestic industry. For purposes of this Article, a product is to be considered as being introduced into the commerce of an importing country at less than its normal value if the price of the produce exported from one country to another
  - a) Is less than the comparable price, in the ordinary course of trade, for the like product when destined for consumption in the exporting country; or,
  - b) In the absence of such domestic price, is less than either
    - (i) The highest comparable price for the like product for export of any third country in the ordinary course of trade, or
    - (ii) The cost of production of the product in the country of origin plus a reasonable addition for selling cost and profit.

Due difference shall be made in each case for differences in conditions and terms of sale, for differences in taxation, and for other differences affecting price comparability.

2. In order to offset or prevent dumping, a contracting party may levy on any dumped product an anti-dumping duty not greater in amount than the margin of dumping in respect of such product. For the purposes of this Article, the margin of dumping is the price difference determined in accordance with the provisions of paragraph 1.

In the ensuing decades, the impact of agricultural surpluses and falling farm prices in the United States caused ripples throughout the world. Due to dominant market position of the US food industry, the US target price became a virtual ceiling in the global marketplace. Agribusiness enjoyed low prices worldwide for raw materials and cheap US grains flooded marketplaces throughout the world. By 1986, world cereal reserves, held mainly by the US and Europe, reached 316 million tons-equivalent to a quarter of annual, global consumption or 2.5 times annual world trade.

Such dumping became legal with the conclusion of the Uruguay Round negotiations of the GATT. Under the new agreement, signed in April 1994, countries are obliged over a period of six years

to phase out export subsidies by 21 per cent in volume and 36 per cent in monetary terms, from the 1986-90 base period. 'This is not a removal of subsidies. It is a perpetuation of subsidies.

The Uruguay Round does not help farmers anywhere, even in the North. The agriculture agreement requires a 20 per cent reduction in each industrialized nation's support for domestic producers over six years and a 13.3 per cent reduction over 10 years for developing countries. All government farm programmes are to be added up as a single monetary value, called the 'Aggregate Measure of Support' (AMS), summing up that country's annual budgetary and its friends in the Congress, have used the commitment to phase down the AMS thereby leading to cutbacks in several support programmes that encourage conservation, wetlands protection, and other environment friendly farming practices.

Under GATT Article VI, a government that was found to be injured by the dumping of overly cheap goods can offset the economic damage by charging countervailing duties on them at the border. But anti-dumping duties on agricultural products have never been assessed in part, because the Protocol for Provisional Acceptance permitted countries to continue pre-GATT policies and in part, because the governments often benefited from the opportunity to distribute cheap foods, while the actually injured parties were peasants with little political clout. The GATT's provisions for anti-dumping have been widely applied in disputes over trade in industrial goods.

US anti-dumping law dates back to 1916 and has been used most frequently by the domestic steel industry to protect itself against imports, in many cases, those more cheaply produced by lower-wage workers. Since a petition for an antidumping investigation is initiated by the concerned private industry, usually one with strong political constituencies, there is a strong incentive for the government to find both price discrimination and injury to the industry, and to order the imposition of anti-dumping duties.

As per the WTO provisions, the EU which accounts for 40 percent of the world trade of dairy products, should have reduce the subsidy on buttar from \$ 1481 a tonne in 1990 to \$ 1392 in 1995, with a commitment to reduce it to \$ 947 in 2000. Similarly on SMP, the subsidy was to reduce from \$430 a tonne in 1990 to \$406 in 1995 with a commitment to reduce it to \$275. Thus, the commitment of the EU has been to reduce 36 percent of the subsidies uniformly. The U.S. also committed to slashing subsidy on these products.

However, looking at the behavior of the world prices of dairy products, one gets a contrary picture. Instead of the world prices being pushed up, as was believed, they actually declined. This is attributed to the increased subsidy by the E.U and the U.S and to the policy of differential subsidy across the globe.

Indian's agriculture imports were of the order of \$1.86 billion in 2000-2001 but they increased to \$ 2.29 billion in the year 2001-2002. If the surge continues, then the interests of the Indian farmers would be seriously affected. The Economic Survey 2002-2003 makes a forthright statement. "India has considerable flexibility to counter flooding of the Indian market by cheap agriculture imports through

the imposition of tariffs (bound rates) under WTO. WTO's permissible tariff rates are reasonably high: 112 percent for nuts, 140 percent for sugar and coffee, 100 percent for tea and cotton, 70 to 100 percent for food grains, 45 to 300 percent for edible oils, and 40 to 50 percent for fruits. Countervailing duties can also be imposed to counter questionable subsidies given to agriculture products by the exporting countries, apart from having the option of acting under safeguard provision to counter the surge of imports."

The per capita transfer to US farmers amounted to \$ 29000 in 1995. In the main maize producing areas of Mindano and Cagayan Valley, the average per capita income amounts to less than \$ 300. So each US farmer receives in subsidies roughly hundred times the income of a maize farmer in Philippines. (Datt 2003)

The developing countries are not allowed to increase their negligible level of export subsidies while the developed countries are allowed to maintain 64 percent of their subsidy outlay on the base level. Consequently, agriculture imports from the developed countries are available at much below the market price in the domestic economy. (Datt 2003)

Even before the WTO mandate began to be asserted, the government has been trying with the idea of opening the vast Indian market for unrestricted imports of skimmed milk powder and milk products. Following the government's economic policy of liberalization, milk powder, which 'used to be on the restricted list for imports, was put on the open general license in 1995-96. The open door policy to MNCs has only placed the national milk grid in jeopardy. U.S and E.U will continue to flood and dump their highly subsidized milk and milk products into the unsuspecting developing countries like India, which have little safeguard mechanism to protect their small dairy products.

New Zealand, with an import order of 12,000 metric tonnes, has already dumped a large quantity of buttar oil into India. Even after paying an import duty of 35.2 per cent, the buttar oil imports have been at less than US \$ 1,000 per tonne against the prevailing global price of US \$ 1,300 per tonne. In simple terms, New Zealand's buttar oil is roughly cheaper by Rs. 15 a kg, made available at Rs. 64.54 per kg compared to the prevailing international prices of Rs. 87.40 per kg. And that too when New Zealand claims not to be providing any subsidy to its dairy farmers.

The resulting crash in the domestic prices of buttar oil was therefore expected. The price of buttar oil (ghee) before the recent import was in the range of Rs. 100 to Rs. 120 per kg, which has subsequently come down by 10 to 15 per cent. While the consumers are happy, the real price has to be paid by the dairy farmers. Since the Indian dairy farmers are paid on the basis of recovery of the fat in the milk, has already suffered erosion in the milk value by 15 per cent.

Jamaican farmers, few years back spilled milk on the streets to protest against the dumping by the U.K. Such protests will gradually be seen in India as the negative impact of trade policy becomes visible. The gain of the 'White Revolution' will soon filter away.

## **Increased Trafficking of Women**

One of the little known consequences of globalization and liberalization will be an increase in the trafficking of women. As the number of girls decline, the atrocities like rape, molestation, sexual harassment, kidnapping will increase manifold. Girls will be afraid to leave their homes. Women will be shackled at home (Nambisan 2004)

According to recent indications, India might soon be competing with Bangkok for the undesirable epithet of 'sex capital' of the world. Sex tourism and trafficking is on the rise in India due the three reasons as identified by United Nations Development Fund for Women (Das Gupta 2004)

- i) Increasing migration of women to cities for economic reasons
- ii) Gender inequality as the victims are mostly women and girls and
- iii) The process of globalisation, which has led to the commodification of women.

India is fast becoming a leading destination for sex tourism and sex trafficking. Justice Ms. Sujata Manohar of National Human Rights Commission points out; "sex trafficking is a modern form of slavery. One must plan beyond merely recruiting the victims because of they do not have the means of income, they will fall prey to the prostitution to survive".

According to a survey report, even in the state like Jharkhand, nearly 50 percent of employed tribal women are subjected to physical and mental torture by their bosses. The study vindicated the stand of the National Commission for Women that sexual harassment is prevalent in India. One would take this statement further that harassment is aggravated by economic deprivation (Das Gupta 2004)

Significantly large number of sexual harassment cases is reported from Tamil Nadu and Andhra Pradesh. A study of the number of cases reported under the Immoral Traffic (Prevention) Act implies that prostitution thrives in Tamil Nadu, Andhra Pradesh and Karnataka as 90 percent of the cases have been reported from here (Menon 2002).

Like most offences, Crime Against Women (CAW) is steadily on the rise in the country. Of the total crimes committed in the country, seven percent constitute CAW. This may not be alarming at first sight but the point is that many crimes are not reported. Kidnapping and abduction of women tops the list. In 1999, of the total crime against women about 67 percent cases of kidnapping and abduction were reported. A significant feature is that 54 percent of the victims were less than 18 years (Menon 2002).

Women in the rural areas are not even aware of their legal rights, but even those who know the law find that even the most horrifying cases take a twist by the time they come up for trial. Society does not get as angry as it does on the matter of religion and castes. They are too tied to wrong tradition and too used to suffering (Nayar 2002).

Ghutiari Sharif, in West Bengal is fast emerging in exporter of sins. Teenage girls, lured from the poverty stricken villages of south 24 paraganas are collected here before being sold off to far-off

places like Mumbai, Bangalore, Delhi, Dhaka and even Dubai. In the initial months, the parents are sent any where between Rs. 3000-4000 to make them believe that the girls are in safe hands. But when the deal is over parents are told that the girls have led their employer. The badly off parents resign to their fate and the girls are lost to the world. They are so poor that they live on week and get to eat rice once or twice in a month, so one can easily imagine how easy the racket are. In the entire deal the go-betweens make Rs. 2000. Most of them are part time farmers. They are asked to go back to their native places during harvesting season and bring back as many as catches as they can on their return. (Sen Gupta 2004)

### **Foeticide and Violence against Women**

The data from the 2001 census reveals some startling facts on the recent fertility decline in the states of Punjab and Haryana. This decline does not correspond with any substantial increase in the contraceptive use; it is in fact as a result of selective sex abortions. In fact, the decline in the sex ratio is in the age group zero to six across India (Times of India 6th November, 2001)

Significantly, social studies indicate that the bias against female progeny is most prevalent between the well off Jat and Jat Sikh community (Sikh whose ancestors few centuries ago were Jat but adopted Sikhism). Even the demand for dowry is highest among them. Purely materialistic factors combine to weigh against the female sex, perpetuating the pre-judice against it. The two primary facts are; first the patriarchal desire to keep land and property within the family by simply eliminating daughters before birth, second excessive pressures for dowry, followed by bargaining consumerism. (Dutt 2004)

The ultimatum issued by the Akal Takht; the Sikh Vatican, on April 13, 2001 against the practice of female foeticide came in the wake of the 2001 census, showing that India's most prosperous state also had the most skewed male-female ratio. The census focused attention on Fatehgarh Sahib district as having the lowest child sex ratio in the country with 754 to 1000. However the fatwa seems to have yielded little results, though ostracism faces those who flout the order of the Akal Takhat, the highest religious authority of the Sikhs (Dutt 2004)

The sex ratio in the age group of 0-6 years has declined sharply from 945 females per 1000 males in 1991 to 927 females in 2001 except Kerala, Tripura, Mizoram, Sikkim and Lakshadweep. The worrying trend is that the female foeticide is not confined to North India but spreading fast to the South of the country, in the states like Andhra Pradesh, Tamil Nadu and Karnataka. Even in the state like Karnataka in Belgaum, Bagalkot and Bidar, the sex ratio has been falling. It is 921 females per 1000 males. In the small taluk like Cikodi, it is as low as 879 and 873 in Gokak (Radhika 2004). The decline has been particularly sharp in Union Territories of Daman and Diu from (969 to 709) and Dadra and Nagar Haveli from 952 to 811. The decline is also alarming in some prosperous states like Punjab, Haryana and Gujarat. Punjab with the highest per capita income has the lowest sex ratio of 793 females per 1000 males in the 0-6 age group. (Times of India 5th may 2001)

Falling sex ratio is definitely a matter of concern. For instance, in Kakhrod village in Jind district of Haryana, there are about 500 men who are past marriageable age as they are unable to find brides because there are few women around (Panicker 2002)

The dearth of girls, as compared to boys of marriageable age, has served to revive the practice of bride price being paid by groom's families. In this, it is not dowry that has to be paid. In fact, there is flourishing trade in supplying girls of different castes from poorer state such as Bengal, Bihar, Madhya Pradesh, Assam and Orissa. Not all such alliances succeed owing to incompatibility; often these girls are pushed into prostitution (Dutt 2004) In Haryana, in some villages the grooms get the bride by paying just Rs. 5000 from Orissa or Assam while a buffalo of good breed may cost about Rs. 40000.

In 1991 not a single district in India had been recorded with a child sex ratio of less than 800, in 2001 there were 14 and the number of district with the child sex ratio between 800-849 increased to 31 during the same period. Ten worst district, with a child sex ratio of less than 800 are in Punjab and Haryana, the two of India's wealthiest states. Fatehgarh Sahib, Gurdaspur, Patiala, Mansa, Kapurthala, Bhatinda and Sangrur in Punjab, Ambala, Sonipat and Kurukshetra in Haryana (Sharma 2004)

It is increasing from the rich to poor, from upper castes to scheduled castes (SCs) and scheduled tribes (STs). Among the scheduled castes (SCs) and Scheduled Tribes (STs) where the average child ratio has always been higher than in general population and better than the national average, it has begun to dip substantially. Thus while in 1991, the child sex ratio for STs was 985 against a national average of 945, in 2001 it has fallen to 973 and amongst SCs, the figure were 946 in 1991 and 938 in 2001 (Sharma 2004)

The Pre-Natal Diagnostic Technique (PNDT) Act came into being in 1994. It stipulates that ultrasound and other techniques be used only to detect foetal abnormalities. In the hands of right people, it has made childbirth safer. But the Act has not achieved what it proposed to. Doctors simply put up a notice that sex determination is banned and then continue to do it. Doctors are a protected species. Committed activists have exposed the erring doctors only to find that the police is not permitted to take action. A government appointed medical team deals with the offence and in most cases the scandal is covered. Medical Council of India (MCI), Indian Medical Association (IMA) and other such bodies should take stringent action against the doctors involved in foeticide. Unfortunately, these bodies act like trade unions only to protect the doctors and clinics.

The forced bachelorhood on the boys will have grave consequences. Old bachelors will be forced into marginalized life without any self-esteem in the house of distant relatives. Thus, according to psychologist, they could add to the problems affecting their physical and mental health. The consequences of declining sex ratio are already visible in Haryana where the elders have started asking social workers and politicians to find brides for the village boys. While there is no proven correlation between bachelorhood and the crime, the pressure value of the institution of the marriage is said to be a crime

deterrent. People in the Bas village of Hissar district in Haryana complain that crime rate has gone up in direct proportion to the number of bachelors (Push karma 2002)

The decline sex ratio will play havoc with the social fabric of the country; leading to social tensions. Female foeticide will dis-empower Indian women. Fewer girls will also mean that their childhood, their marriage and their future will come under a variety of social and physical threats, where only those who have power, wealth, and influence will dictate their choices in life (Vasudev 2003)

The Census Commissioner rightly observes in his report, "one thing is clear - the imbalance that has set in at this early age group is difficult to remove and would remain to haunt the population for a long time to come. To say least, the demographically, the sex ratio of 927 of the population in the age group zero to six does not appear to augur well for the future to come" (Bose 2001)

## Public Hearing held in Mandya, Karnataka



**PART - II**  
**CASE STUDIES AND JAN SUNVAWAIS**

## **2.1 CASE STUDIES AND JAN SUNVAWAIS**

### **KARNATAKA**

State of Karnataka is the eighth largest in the country having an area of 1.91 lakh sq. Kms. It has coastline of 310 Kms. Coastal zone is a narrow strip of land between the Arabian Sea in the West, the Western Ghats in the East, Kerala in the South and Goa in the North. It had a population of 52.73 Millions (2001) with population density of 275 per sq. km. The state had a rural population of 34.81 Million and Urban population of 17.92 Million. More than 71 % of this population is engaged in Agriculture. Scheduled Caste and Scheduled Tribe constitute 16.20% and 6.55% of the total population. Average farm size stands at 1.74 hectares as per Agricultural Census 2000-2001. (Directorate of Land use statistics, Karnataka Government, 2004)

#### **Importance of Agriculture**

Agriculture plays an important role in the economy of the State. Besides contributing a substantial part of the state domestic product (about 25.3% in 200001), it is also the largest source of employment. Out of 23.52 million workers in the state (as per 2001 census), agriculture and allied activities provide employment to 113.14 million (55.87%)

#### **Agricultural Holdings:**

According to 2000-01 agricultural Census, total number of holdings in Karnataka was 70.79 lakhs, out of which small and marginal farmers accounted for 19.09 lakh and 32.52 lakh holdings respectively. Against the total operated area of 123.07 lakh hectars, small and marginal farmers accounted against which average size of holding of small and marginal farmers was 1.44 and 0.46 hectares respectively. Scheduled caste and Scheduled Tribes consist of 8.23 lakhs (10.71 lakh hectares operated area) and 3.82 lakhs (6.75 lakh hectars-operated area), respectively. Even though small and marginal farmers account for 72.9% of total holdings, the total area operated by them works out to only 34.4% of holding had declined to 1.74 hectares from 3.20 hectares. Total area under agricultural crops, which was about 90% of the gross cultivated area, had declined by about 3% and it was 87.35% in 2000-01. Area under non-agricultural crops has seen a upward trend from 10.87 lakh hectares in 1980-81 to 15.54lakh hectares in 2000-01.

#### **Irrigation:**

Irrigation plays a very special role in Agriculture. Karnataka has only about 1A of cultivable area under irrigation and rest % is dependent on rainfall. Expansion of irrigation infrastructure in Karnataka

has been slow, but it has increased four folds in the last four and half decades. Net irrigated area, which was 7.11 lakh hectares in 1955-56, had gone up to 26.43 lakh hectares in the year 2000-01. But, the intensity of irrigation, which was 102% in 1955-56, had increased to 124% in 2000

Canals account for approximately 40% of the total irrigated area; the second main source of irrigation is Tube/Bore wells.

The state has four major irrigation reservoirs under Cauvery Basin viz. Krishnaraja, Sagar, Harangi, Kabini and Hemavathi and five major irrigation reservoirs under Krishna basin viz. Bhadra, Tungabhadra, Ghataprabha, Malaprabha and Narayanapura. The potential planned under Krishna basin under all projects is about 21.02 lakh hectares and potential created upto January 2004 is about 14.44 lakh hectares. Parts of Bellary, Raichur and Koppal districts are covered under Tungabhadra project. Parts of Belgaum, Bijapur and Dhapur and Dharwad districts are covered by Malaprabha and Ghataprabha reservoirs. Bhadra reservoir covers parts of Shimoga, Chikmagalur and Davanagere districts. Upper Krishna project covers parts of Gulbarga Bijapur and Raichur districts.

Similarly, under Cauvery basin potential planned in about 7.28 lakh hectares and potential created upto January 2004 is around 5.15 lakh hectares. Parts of Mysore, Kodagu, Chamarajanagar, Hassan, Mandya and Tumkur districts are covered under Cauvery basin projects.

Agricultural production in the State is divided/spread over three seasons namely Kharif, Rabi and summer. These seasons account for nearly 70%, 22% and 8% of annual food grains production respectively. Similarly, in case of oilseeds, this ratio is of the order of 70%, 15% and 15%.

Normally, area coverage under Kharif, Rabi and summer seasons is around 69 lakh hectares, 31 lakh hectares and 6 lakh hectares respectively.

### **Agricultural Production:**

Since late 1950s production of cereals has increased three times; it was 30-35 lakh tones and now ranges 90-100 lakh tones. This is largely due to increase in production of rice maize and ragi. Production of tur and Bengal-gram has increased substantially and has been important factor in increase of pulse production from 3-4 lakh tones to 8-9 lakh tones in recent years. Total food grains production has increased from 38.04 lakh tones (1955-56) to 1.09.60 lakh tones in the year 2000-01. Oilseed production was highest (18.89 lakh tones) in 1993-94 on account of introduction of sunflower crop, but the same has seen a declining trend due to availability of cheaper imported edible oils. Production of cotton also increased three folds, from 3.01 lakh bales (1955-56) to 10.09 lakh bales in 1996-97. But in recent years the same has been declining due to less area coverage and diversion of area to maize and sunflower. Production of sugarcane has increased tremendously from 31 lakh tones in 1955-56 to 429 lakh tones in 2000-01. (Directorate of land use statistics, Karnataka Government 2004).

**Yield :** Per hectare productivity of Cereals has seen a three-fold jump from about 5-6 quintals to about 18 quintals per hectare. This mainly due to increase in the yield rate of Rice, Ragi and Maize. Productivity of pulses has increased marginally, 4-5 quintals from 2.5 to 3.0 quintals per hectare. There has been no significant change in yield rate of oilseeds; it has remained constant at 6-7 quintals per hectare. Yield of cotton has increased from 47 Kg/hectare in 1955-56 to 277 kg/hectare in 2000-01. Sugarcane yield has increased to 108 tonnes in recent years from 61 tonnes at the time of formation of the state.

**Food grains Requirement:**

The Indian Council of Medical Research (ICMR) has suggested the following scale (table 5.1) for providing a balanced diet to an average Indian adult. Based on ICMR norms, table 5.2 gives the estimated requirement for cereals, pulses, edible oil, sugar and cotton in Karnataka.

**Table - 2.1 (1) : Diets Recommended by Indian Council of Medical Research**

| Sl. No. | Commodity/Food Stuff | Recommended Quantity (Gms/head/ day) |
|---------|----------------------|--------------------------------------|
| 1.      | Cereals              | 400                                  |
| 2.      | Pulses               | 85                                   |
| 3.      | Fats                 | 28                                   |
| 4.      | Sugar                | 57                                   |
| 5.      | Vegetable            | 280                                  |
| 6.      | Fruit                | 120                                  |

**Table - 2.1 (2) : Estimated Requirement/Availability of Cereals, Pulses, Edible Oils, Sugar/Gur and Cotton in Karnataka.**

| Sl. No. | Items  | Year    |         |         |         |         |         |         |
|---------|--|---------|---------|---------|---------|---------|---------|---------|
|         |  | 2000-01 | 2001-02 | 2002-03 | 2003-04 | 2004-05 | 2005-06 | 2006-07 |
| 1       | Population in '000s  | 52734   | 53646   | 54574   | 55519   | 56479   | 57456   | 58450   |
| 2       | Adult population equivalent of total population @ 86% in '000s | 45351   | 46136   | 46934   | 47746   | 48572   | 49412   | 50267   |
| 3       | Estimated requirement of :                                     |         |         |         |         |         |         |         |
|         | a) Cereals @ 400 gms/adult/day in '000 tonnes                  | 6621    | 6736    | 6852    | 6971    | 7092    | 7214    | 7339    |
|         | b) Pulses @ 85 gms/adult/day in '000 tonnes                    | 1407    | 1431    | 1456    | 1481    | 1507    | 1533    | 1560    |
| 4       | Add : 10% for seeds, cattle feed etc in '000 tonnes            |         |         |         |         |         |         |         |
|         | a) Cereals   | 662     | 674     | 685     | 697     | 709     | 721     | 734     |
|         | b) Pulses  | 141     | 143     | 146     | 148     | 151     | 153     | 156     |

| Sl. No. | Items  | Year         |             |             |              |              |              |              |
|---------|--|--------------|-------------|-------------|--------------|--------------|--------------|--------------|
|         |  | 2000-01      | 2001-02     | 2002-03     | 2003-04      | 2004-05      | 2005-06      | 2006-07      |
| 5       | Total requirement in '000 tonnes                                   |              |             |             |              |              |              |              |
|         | a) Cereals   | 7283         | 7409        | 7538        | 7668         | 7801         | 7936         | 8073         |
|         | b) Pulses  | 1548         | 1575        | 1602        | 1629         | 1658         | 1686         | 1715         |
|         | c) <b>(a + b) Foodgrains :</b>                                     | <b>8831</b>  | <b>8984</b> | <b>9139</b> | <b>9297</b>  | <b>9458</b>  | <b>9622</b>  | <b>9788</b>  |
| 6       | Requirement of edible oils @ 9 kgs/adult/annum ill '000s tonnes.   | 408          | 415         | 422         | 430          | 437          | 445          | 452          |
| 7       | Total requirement of Sugar/Gur @ 40 gms/person/day in '000s tonnes | 662          | 674         | 685         | 697          | 709          | 721          | 734          |
| 8       | Requirement of Cotton @ 2 kg/adult/annum in '000s tonnes (lint)    | 91           | 92          | 94          | 95           | 97           | 99           | 101          |
| 9       | <b>Availability/Production Target :</b>                            |              |             |             |              |              |              |              |
|         | Cereals  | 9979         | 8015        | 6031        | 9786         | 9974         | 10172        | 10373        |
|         | Pulses   | 970          | 756         | 700         | 852          | 843          | 862          | 882          |
|         | <b>Total Foodgrains</b>  | <b>10949</b> | <b>8771</b> | <b>6731</b> | <b>10638</b> | <b>10817</b> | <b>11034</b> | <b>11255</b> |
|         | Foodgrains per capita Availability per day in K.gram               | 0.661        | 0.521       | 0.399       | 0.631        | 0.608        | 0.608        | 0.608        |

Directorate of land use statistics, Karnataka Government.

### Coffee Plantation in Karnataka

Coffee was introduced in 1600AD, but commercial plantations were only set up in the 1820s following British investment. As the number of British growers increased, cultivation was steadily extended throughout Karnataka and a large plantation of 1,200 hectares was established in the 1870s. Most coffee planted in the early years was Arabica, mainly the Old Chicks variety that apparently inherited the bean qualities of the original Mokka introduced by a Muslim pilgrim, Baba Budan. In Chickmanglur Arabica cultivation reached its early peak during the 1860s but this coincided with major outbreaks of pests and diseases such as white stem borer and coffee leaf rust. There was an epidemic of coffee leaf rust in 1889. Due to this the productivity and output declined and poor prices added to the decline. To counteract falling yields enterprising planters introduced seeds from other origins and some planters tried to select and evolve disease-resistant arabica. One of the most promising types developed was Kents, which became popular. Robusta was introduced from Indochina at the end of the nineteenth century for planting in estates at lower altitudes. (Coffee Profile of India, 2003)

**Coffee in the Economy :** Coffee contributes between 3 and 4 percent of the GDP of Karnataka, the largest producing state. An estimated 5 million people directly or indirectly depend on coffee in the three southern states for their livelihood. Coffee contributed less than one percent of export earnings in 1993-94, but this increased to almost 1.3 percent in 1998-99, following the improvement in world price.

**Share in global production and exports :** India's share in global production is 4.5% (2000-01) and its share in global exports is also almost nearer to the level 4.7% in 1999-2000.

**Area Production and Yields :** Planted area in coffee has increased nearly four fold in a span of past five decades to 346995 ha and almost equally shared by arabica and robusta. While production registered in impressive growth to 300,600 tonnes in 2001-02 from a meager 18,893 tonnes of 1950-51. It will be observed that the most vigorous growth was in the area planted to robusta and this now accounts for just over half of the coffee area. In terms of production robusta now shares about % of total production while arabica shares the rest.

**Table - 2.1 (3) : Coffee Area (Hectares)**

| Year    | Arabica | %  | Robusta | %  | Total  |
|---------|---------|----|---------|----|--------|
| 1950-51 | 67613   | 73 | 24910   | 27 | 92523  |
| 1960-61 | 70650   | 59 | 49670   | 41 | 120320 |
| 1970-71 | 80433   | 59 | 55030   | 41 | 135463 |
| 1980-81 | 109454  | 53 | 98815   | 47 | 208269 |
| 1990-91 | 127934  | 47 | 142887  | 53 | 270821 |
| 2000-01 | 167679  | 48 | 179037  | 52 | 346716 |
| 2001-02 | 165892  | 48 | 181103  | 52 | 346995 |

Coffee cultivation is largely confined to three Southern States, Karnataka accounts for 58 percent of the planted area but contributes about 70% of Indian production. Kerala with 24% and Tamil Nadu with 9% of planted area account for 22% and 7% of India's coffee production respectively. (Table 2.4 and 2.5)

**Table - 2.1 (4) : Planted Area by States - 2001-02 (Ha)**

| State                  | Arabica (MT) | %    | Robusta (MT) | %    | Total (MT) | % to India |
|------------------------|--------------|------|--------------|------|------------|------------|
| Karnataka              | 110260       | 31.8 | 91515        | 26.4 | 201775     | 58.1       |
| Kerala                 | 4149         | 1.2  | 80646        | 23.2 | 84795      | 24.4       |
| Tamil Nadu             | 25018        | 7.2  | 5663         | 1.6  | 30681      | 8.8        |
| Non-Traditional Areas  | 25465        | 7.3  | 3279         | 0.9  | 28744      | 8.3        |
| Non Conventional Areas | 1000         | 0.3  | —            | —    | 1000       | 0.3        |
| Grand Total (India)    | 165892       | 47.8 | 181103       | 52.2 | 346995     | 100.0      |

Coffee is also grown to a lesser extent in Andhra Pradesh and Orissa and North Eastern states. The average overall productivity is 937 kg/ha (2001-02). Average robusta yields (1046 kg/ha) are considerably higher than arabica yield (812 kg/ha.).

**Table - 2.1 (5) : Production by States (2001-02)**

| State                  | Arabica (MT) | %     | Robusta (MT) | %     | Total (MT) | 5 to India |
|------------------------|--------------|-------|--------------|-------|------------|------------|
| Karnataka              | 99430        | 82.2  | 109240       | 60.8  | 208670     | 69.4       |
| Kerala                 | 1420         | 1.2   | 65270        | 36.4  | 66690      | 22.2       |
| Tamil Nadu             | 16750        | 13.8  | 4880         | 2.7   | 21630      | 7.2        |
| Non Traditional Areas  | 3050         | 2.5   | 160          | 0.1   | 3210       | 1.1        |
| Non Conventional Areas | 400          | 0.3   | 0            | 0.0   | 400        | 0.1        |
| Total (India)          | 121050       | 100.0 | 179550       | 100.0 | 300600     | 100.0      |

**Number and size of holdings :** Out of a total of 156800 coffee holdings of India 98% are small (less than 10 ha. in size). About two-third of the area is farmed by small holders, with an average holding of 1.46 hectares. Large holders cultivate 46.4 hectares on average farm 35 percent of the land and accounts for 40 percent of output, as their productivity levels are moderately higher.

**Cultivation Practices :** Planting is carried out in rows with a spacing of 1.8 m for arabica and 2.7 m for robusta though this spacing varies between varieties and the degree of slope. Coffee is grown as a bush with a single stem, which was found to be most suitable under Indian conditions. Under this system, the main stem is cut back to allow lateral branching with a further topping at about 1.5 meters. In addition to topping, periodical pruning of unwanted branches and suckers is also carried out. (Coffee Guide, 2003)

Commercial fertilizers that contain nitrogen (N), phosphorous (F) and Potash (K) either individually or in the complex form are used in plantations besides the organic match available through the fallen leaves of the shade tree.

**Shade and Intercropping :** All the coffee in India is grown under the canopy of shade trees. Where intercropping exists, pepper vines are trained on shade tree. larger farms often grow orange and other citrus trees within the coffee area. Bananas, once a major intercrop especially in Tamil Nadu regions, are now out of race following an outbreak of a viral disease.

**Pests and diseases :** Arabica and robusta coffees in India are susceptible to fungal diseases. Arabica is more susceptible to pest and disease than robusta. Coffee leaf rust, caused by the fungus *Hemileia vastatrix* is the major disease in arabica. The second most important disease affecting with arabica and robusta is black rot caused by the fungus *Koleroga noxia*. White stem borer (*Xylotrechus quadripes*) is the most serious pest of Arabica coffee in India and it is prevalent in all coffeegrowing areas. Another endemic pest is mealybugs (*Planococcus* sp.) Coffee berry borer (*Hypothenemus hampei*) affects the berries resulting in heavy crop loss. (coffee guide 2003)

**Labour Requirement :** Coffee production in India is labour intensive as in some other countries. It is estimated that the equivalent of some 551,000 workers are employed on daily basis. The total estimated labour requirement for a hectare of yielding plantation of arabica and robusta respectively are 495 man days and 330 man days per year.

**On farm processing :** It consists of the preparation of dry cherry and parchment. Dry cherry is prepared by sun drying the fruits and spreading them evenly on the drying grounds (tiled, concrete or mud-plastered yards). Only ripe fruits can be used for wet processing. These are pulped by machinery, which removes the fruit skin. The mucilage is removed later by machinery (Originally, the mucilage was removed by natural fermentation but this is no longer popular).

Moisture standards are confirmed by sampling. Normally the cherry would be fully dry at the end of 12 to 15 days under bright weather conditions. The prescribed moisture standard for Arabica is 10.5 percent and 11 percent for Robusta. Most Robusta is prepared by the dry method.

**Off-farm Processing :** There are presently 73 licensed privately owned curing/processing factories. Most of the factories are well equipped and are able to process the best quality coffee. The quality standards instituted by the Board are used by all processors for exports and domestic consumption.

#### **Marketing Structure and Marketing Channel**

Until 1992-93 coffee marketing was wholly administered and regulated by the Coffee Board. Reflecting government policy and responding to the views of the growers, a process of liberalization was initiated by the Board during 1992-93. An Internal Sale Quota (ISQ) was introduced. This allowed growers to sell 30 percent of their output directly to the domestic market. A Free Sale Quota (FSQ) replaced the ISQ in 1993-94, which allowed growers to sell 50 percent to the domestic market or export directly. The FSQ was increased to 100 percent to small growers and 70 percent for large growers in 1994-95. In the subsequent season large growers were also given 100 percent FSQ. Now all restrictions have been abolished. As a consequence, the Coffee Board has devised new roles for the changed free market situation.

The activities of the Coffee Board have been considerably reduced following the drive to full market liberalization. Both large and small growers are now free to market their coffee in any way they choose. Nevertheless, the Coffee Board undertakes a variety of roles to the benefit of the industry in general. Liberalization has meant that the future activities of the Board will be focused in the areas of research and development, quality control, market intelligence and information, market promotion, extension and free market development.

**Current Scenario :** Coffee from the growers is purchased at approximately 40 local buying centers. Many major and smaller buyers are represented at each center. Most small growers prefer to sell coffee in the form of dry cherry and parchment. Large growers and estates sell coffee in green and graded form either directly to exporters or by private auction. Domestic distribution of coffee takes place through wholesale and retail roasters.

Consequent to dismantling of auctions by the Board, less than 10 percent of coffee is sold through the private auction. Fortnightly auctions are held by the Indian Coffee Traders Association (ICTA) since 1993 at Bangalore, which facilitate growers to sell their graded coffees. However, as most growers prefer to sell their unprocessed crop directly to exporters or roasters, the scope for auctioning green coffee at the moment remains comparatively limited.

**Grover Prices :** Estimated grower prices after liberalization of the market during 1995-2001 are given in Table-2.6. Increased output will depend, to a very large extent, on the prices received by growers. There was a general decline in prices received by growers until 1991-92. Prices then moderately recovered before rising sharply following the Brazilian frost and drought of 1994. Grover prices were comparatively higher during 1995 to 1998 seasons and price has typically averaged 60- 75% of the export unit values. From 1999 onwards again there is a steep and continued decline in prices received by growers.

**Table - 2.1 (6) : Producers Prices (in US Cents/lb)**

|                       | 1995  | 1996  | 1997   | 1998  | 1999  | 2000  | 2001  |
|-----------------------|-------|-------|--------|-------|-------|-------|-------|
| Grower Prices Arabica | 84.72 | 78.32 | 130.18 | 99.47 | 67.44 | 63.75 | 43.82 |
| Robusta               | 66.53 | 56.68 | 76.3   | 75.62 | 57.61 | 57.87 | 23.44 |

**Exports :** Indian coffee is exported to over 40 countries but the top 6 markets are Russian Federation, Italy, Germany, Belgium, Spain and USA, which account for nearly 70% of Indian coffee exports. Between the periods 1997/98 and 2000-01 exports registered a growth rate of 9% p.a. In terms of export earnings 1999-2000 was particularly impressive owing to better volumes in spite of reduced international prices and unit value. Export picked up during this period due to higher exportable production. Owing to falling international prices the export value came down to 1050 crores during 2001-02 from 1375 crores of the previous year, which represented a fall of 325 crores (24%).

In terms of unit value of exports, all the grades including instant showed an appreciable decline, ranging from 29% in the case of instant coffee to 60% in the case of plantation grades. The overall decline for all coffees in prices was 48%. This has reflected on the export earnings of 2001-02

**Domestic Consumption :** Domestic consumption, which is not currently expanding, is mainly confined to the producing states with use in Tamil Nadu almost half of the total and Karnataka according for 30 percent. The total estimated demand of coffee in India now is about 65,000 tonnes. Consumption was almost stagnating for the past one decade around 60,000 tonnes and showed a marginal decline, consequent to domestic retail price hikes in 1993 and 1994. Though the current per capita consumption is about 60 gms., is very low, good potential exists for its growth. Many small gourmet roasters as well as some big private corporate roasters cater to the local market. Nestle and Hindustan Lever is the major manufactures of soluble coffee. With the gaining of popularity of cafes in the metros in the recent years, coffee is establishing itself as a life style product. In the long run this may help to prop up the otherwise stagnant market.

With the international coffee organization disbanded and the quota regime gone, Indian producers were left to themselves to compete for a market. Coffee prices dropped from their highs and producers had to take massive cuts in profits (Srinivasan 2004). Coffee exports, from the beginning of the year 2003 till the end of May 2003, stood at 65,149 tonnes as against 1.19 lakh tones during the same period in 2002. Besides, rupee appreciation has played its role in impacting the exports. With export prices denominated in dollars, a stronger rupee lends to lower returns to farmers and reduces selling interest. Realization for growers in rupee terms had dropped by close to eight percent in 2003 compared to the previous of 2002 (Kulkarni 2003).

Coffee growers who are facing a drought-like condition, apart from battling the crisis due to poor prices, have urged the government to waive the interest on loan under the Special Coffee Term Loan (SCTL) scheme. In a representation made to the Reserve Bank of India, growers said that the waiver of interest extended to the agriculture sector in the drought-hit states, should also be made applicable to the coffee sector (Kulkarni 2003).

### **Field Study**

Karnataka is one such state in India where lots of lands are under plantation crops. The most common plantation crops in the state of Karnataka are coffee, banana, spices, cocoa, vanilla, coconut and areca nut.

Coffee is grown mostly in Chikmagalur, Hassan and Coorg districts. Chikmagalur district is the first to grow coffee in India. The cultivation of coffee has an eventful background. It is said that coffee was introduced around 1670 AD by one Baba Budan. He is reported to have brought coffee seeds from Yemen and raised seedling on the hills of Chikmagalur. Later the seedlings were supplied to Coorg and Kerala.

Chikmagalur is pre-eminently mountainous with a flat projection in the east. This hilly Malnad tract full of rich forest is renowned for its coffee plantations. The large area of this district is Malnad i.e. a largely forested hilly region of heavy rainfall. The landscape of the tract is highly enchanting the slopes of the mountains, hills here are replete with fascinating natural beauty. They are clad with thick forests through which the shining streams wind their way, fertilizing the narrow valleys and glades. The western part of the district is covered with some of the dense and most useful forests of the country. The forests clothe the hilly sides densely and give the much-needed shelter for coffee cultivation. The district is rich in forest resources. (Gazette of Chickmagalur, 2003)

Soil in this part of the district is of poor acidic type, though relatively poor, the soil is well suited for the growth of plantation crops like coffee.

Coffee is a self-pollinating plant and the fruits are called berries. Coffee plant usually 7 to 8 years old before it bears a full crop. Coffee is a perennial and an annual crop, grows best at altitudes ranging from 3,600 to 8,000 feet in tropical climate.

The coffee varieties commonly cultivated in these districts is Arabica, Robusta, Cauvery and 795. Coffee plants have a life span of 50 to 60 years. 'Arabica' variety is widely cultivated as it yields better and the seed fetch a good price in the market. This variety is of international standard and most demanded variety by traders. 'Robusta' is a sturdy variety which was the only variety grown earlier, but now only few grow this variety. Robusta grows to a height of 5 to 6 feet. This variety yields lesser and the price it fetches in market is also less.

Coffee produced in India is only 3% of the international produce and 1.98% of world's export. It earned Rs. 324 crores from the coffee exports in 1991 and the same exports increased to Rs. 1868 crores in 1998 but then decreased to Rs. 1682 crores in 2000 and it stood at Rs. 1112 crores in 2003 due to fall in international prices. Karnataka accounts for 70% of India's production, Kerala 24% and Tamil Nadu 6%. Coffee is produced in 2,04,270 hectares of "land in Karnataka. Chikmagalur accounts for 87,038 hectares, Coorg 82,350 hectares, Hassan 34,090 hectares, Mysore and other 800 hectares. (2002-2003 figures)

In the area under coffee cultivation 32,035 planters have less than 2 hectares of land, 14,699 planters have between 2 to 4 hectares, 7,281 planters have between 4 to 10 hectares, 1,344 planters have between 10 to 20 hectares, 374 planters have between 20 to 40 hectares, 147 planters have between 40 to 60 hectares, 81 planters have between 60 to 80 hectares, 52 planters have between 80 to 100 hectares, 130 planters are above 100 hectares.

**Table - 2.1 (7) : Average daily number of persons employed in coffee plantations in Karnataka**

| Districts   | 1994-95  | 2001-02  |
|-------------|----------|----------|
| Chikmagalur | 98,290   | 1,28,250 |
| Coorg       | 1,92,070 | 1,97,550 |
| Hassan      | 79,410   | 87,300   |

Average minimum wages in plantation crops of Karnataka is Rs. 64.75 per day.

#### **Influence of WTO on Coffee Plantation:**

Many planters are of the opinion that mo has affected them to a large extent. They feel that due to the open market system a planter cannot sell coffee at a higher price as against the fixed price because the trader or the buyer has an option of buying from other markets like China and Vietnam where the coffee prices are low.

**Mrs. Chitra Subbaiah** a planter from Coorg and Secretary of Kodugu Women Coffee Awareness Board feels that mo has killed them. She said that the local traders, whom they had to sell their produce, were cheating them and buying from external markets, as the prices were very low there due to low cost labour. She blamed the political leadership for their short sightedness for signing the mo agreement. She asserted that India does not need mo.

**Rudrappa** a planter from Sakleshpur, Hassan district, blamed WTO for the current economic distress in the coffee plantation. He feels the planters were not trained to meet the requirements of international standard, which WTO has specified. He said if the coffee is dried in the yard it is not acceptable to the trader, as he prefers only machine dry, which the small farmers like him cannot meet. "The traders fix the price and do not take the cost of production into consideration, so the industry is running at a loss", he said. Rudrappa says, "We have to give labour all the facilities while our incomes are low and that is the reason why we have reduced the permanent labour and have gone in for contract labour". He painfully said that now the planters are unable to manage the estates and there are more than 500 estates that are available for sale.

**Ramachandra** a small farmer of Shanthahalli, Coorg district blamed WTO for Coffee Board not giving any subsidy for manure. The subsidy would have helped the planters in a big way at this hour of crisis and to overcome their difficulties.

**Narayan Alva** of Sakleshpur taluk; Hassan district said that the planters are at the receiving end. When the coffee prices shot up between 1995 to 1997 the daily wage rate of labour increased but now when the price of coffee has reduced the wages remain the same, so maintenance of permanent labour has posed a lot of problem for the planters and the present distress has forced them to go in for contract labour instead of permanent labour

**Chandre Gowda** of Araluppe, Chikkagalue district, said in the Year 1995 when the coffee prices started soaring high the planters started buying more lands and borrowed heavily from banks for further investment on lands but when the coffee prices reduced from 1998 onwards that caused problems to them as they could not service their debts, virtually this has put them in a debt trap. Banks are no longer lending them and are not meeting their financial requirements, which they badly need in this hour of crisis. He said many for our both big and small farmers have become bankrupt. It is difficult for the planters to survive, as he is in debts because of rise in cost of agricultural products like fertilizers and pesticides, Mr. Chandre Gowda said.

Some of the planters in districts of Chikmagalur, Hassan and Coorg although are not aware of the problems posed by WTO but blame the Government policies for their miseries. They could not point out exactly as to what has gone wrong with the coffee plantation and fall in prices.

The crisis in coffee plantation and fall in prices has made planters to go in for alternative crop cultivation like vanilla, rice, banana, amla and ginger.

Hariprasad, who owns 75 acres of land in Aldoor in Chikmagalur district, sold part of his land to repay the bank loan, as he could not maintain his plantation, as the yield couldn't fetch him a compensatory price. To maintain his family, which became difficult and to supplement his income he had to start a hotel.

**M.K. Murthy** of Aldoor, Chikmagalur district blames liberalization as the root cause for the present economic crisis among planters and drop in prices of coffee. He blames the open market

system that has given the traders the power to fix the coffee prices. This has in turn ruined the planters and the coffee industry. The planters have become pawns in the hands of the profit hungry traders, who care hoots for the interest of the planters.

**Naseer Ahmad** of Hosahalli, Sakleshpur taluk, Hassan district, and a small farmer who owns 15 acres of coffee plantation has not been able to cope up with the present recession. His revenue per acre earlier was between Rs. 25,000/- to Rs. 28,000/-, but now although his expenses are Rs. 20,000/- his earning is only Rs. 8,000/- per acre, so he is under severe loss. This led him to sell his tractor and jeep to clear his loans. In desperation he is planning to change over to vanilla cultivation, as the expenses incurred per acre is lesser compared to coffee. Earlier he earned from sale of orange and pepper but due to less rains the orange trees have dried up and pepper is infested with pests.

**D.M. Shanker** of Agalguppe village has about 150 acres of coffee plantation. He is maintaining 40 per permanent laboures. According to Shankar heavy labour is required during periods of spraying, manuring, picking, weeding and sanding. Coffee is labour intensive and requires 365 days care.

Government policies have not helped the planters, but government has provided for the labour class with free education, free meals for students and monthly ration at affordable prices - so a labourer can sustain. But it is difficult for an estate owner to survive as he is in debts because of rise in the cost of agricultural products like fertilizers and pesticides.

Bank policies have misled the planters as during 1994 and 1996 the prices of coffee reached its peak but the banks instead of guiding the planters to go in for fixed deposits the bank provided them with more loans. This has created havoc as the planters further invested in purchase of land to cultivate more coffee that would fetch the more profits. The bank lent for 100 acre estate 100 crore loans, though the planters had surplus income they have borrowed and spent heavily on luxury items. Now with the coffee prices falling low the planters are unable to repay the bank, this created an imbalance. Now he has started borrowing from outside sources at high interest rates to pay the bank interests.

Earlier coffee used to be bought by the Coffee Board but now the planters are independent and sell their produce to the traders, the prices are fixed according to the quality.

In the year 2000, the coffee industry requested the government and the bank to exempt 1700 crore borrowed by the planters. If this is exempted then the planters can survive, otherwise the whole industry will collapse.

If the planter does not repay he is considered, as Non Performing Applicant (NPA) is this status is declared then the planter is unable to raise funds from any other financial institution or other sources. The Karnataka Government to certain extent has exempted the borrowing from small banks, but borrowers of nationalized banks face the problem. 2003 was the lowest crop, and 2004 is the worst year for a coffee planter.

**Prema** of Agal Khan estate in Agalguppa village has 100 acres of coffee plantation. According to Prema, annual expenses on estate per acre - Rs. 15,000 to 20,000, expenses includes labour - minimum Rs. 12,000 per labour wages Rs. 65 for both men and women. Maintaining permanent 30 labourers, providing medical, water, shelter, higher education for their children during wedding etc. Earlier 80 labourers but now cut short to the above-mentioned number.

Manuring both pre-monsoon and post monsoon Rs. 1000 per spray per acre, pesticide spraying twice per barrel Rs. 125 (8 to 10 barrel requirement per acre). To break even half ton coffee yield is required. Arabica coffee is sold at Rs. 50,000 to Rs. 55,000 per ton at the present rate. Coffee is labour intensive and requires 365 days care. Regular checking for stem borer attacks. Coffee everything is preventive and timely measures are necessary, heavy labour. required during periods of spraying, manuring, picking, weeding and shading. Women psychological do not commit to hard work.

Government policies have not helped the planters, but government has provided for the labour class with free education, free meals for students and monthly ration at affordable prices so a labourer can sustain. But it is difficult for estate owner to survive as he is in debts because of rise in the cost of agricultural products like fertilizers and pesticides.

The woes of small farmers are more acute than the big farmers due to liberalization and globalization. The cost of production has go up due to use of machinery for drying of coffee and the global competition has brought down the prices, says Nisar Ahmed.

The planters of Coorg faced similar problems by cultivating coffee. The planters earlier grew only cardamom but due to shortfall in rains, many of them had shifted to growing coffee. Even this proved a curse to them. Fall in coffee prices has increased their miseries. High rate of interest from banks has made them bankrupt. Most of the planters have not paid back even the interest and they want further investment, which the banks are not ready to give.

**Rajanna** in shanthalli village of Coorg district has 20 acres with include 5 acre of coffee and 15 acre of cardamom. Earlier only cardamom was cultivated but due to less rains shifted to coffee. But the shifting has caused them problems, as it is not feasible to cultivate coffee. Even now cardamom fetches good price. 4 acres of land is leased out for paddy cultivation, the yield is shared between the two, so paddy is only sufficient for self-consumption and labour are paid Rs. 60 for women and 100 for men. One acre cardamom gets 10,000 income, but rate fluctuations are there but if the crop is good the income earned is good. For the past two years the cardamom crops has been bad. Due to this 2-lakh loan has been incurred; coffee has not yielded any income at all.

**Ramchandra** of Shanthalli village has 15 acres cardamom and 10 acres of coffee. 20 years back only cardamom, but then shifted to coffee. 20 labourers permanent 65 to men and 50 to women, cardamom sold to the spice board so the prices are fixed, but we have been able to clear all our loans. Coffee does not yield well due to less rain; we have compensated our income by renting out a house, which fetches an additional income every month.

The small planters in Coorg district are changing to ginger cultivation as they feel that it will fetch them a good price. Some other planters want to shift to vanilla cultivation. Will that be a solution or is it an escape many are not sure.

### **Unaware of WTO, blame Government**

Some of the planters in Chikmagalur, Coorg and Hassan districts are not aware of WTO and don't have the knowledge about the effects it has brought about on their lives. However, they blame the government - both Centre and State - and their policies for fall in coffee prices in late 1990's and beginning of 2000. They blame the Open Market System and the traders who fix the price of coffee, are responsible for this down fall in prices. The planters point out that our own traders have spoilt the international market for they purchase less priced coffee from China and Vietnam and this has caused a decline in Indian coffee prices. It may be pointed out here that the planters are not aware of the changes in Government policies which has come about after the introduction of new economic policies from 1991-92 onwards under the influence of WTO, which has resulted in throwing open markets for world wide competition.

### **Failure to Educate Planters**

Coffee Board has also not made efforts to educate the planters about the changes that have come about in the world scenario in the field of coffee trading and this partially jeopardized the interest of the planters. The transition from total control of the Coffee Board to Open Market System virtually at the mercy of the traders has been very quick and planters have not been able to cope up with these fast-changing policies. The small planters are the most affected ones by these changes, as they neither have required capital nor technical know-how. The high rate of bank interest that did not come down in level with international bank rate put the planters in grave financial crisis, in addition to the fall in international coffee prices. The banks did not bring down the lending rate of interest, which was as high as 16% to 21% till recently. Banks were liberal in lending to the planters during the boom period of 1995 to 98 as they were getting more profits but later squeezed the credit totally in the period of crisis - 1999 to 2003. Had the banks brought down the interest rate in the year 1998 onwards the planters would not have been in present soup.

### **Additional Factor**

Another additional factor, which has increased the cost of production for the planters, is the use of chemical fertilizers and pesticides. Earlier the planters were using farmyard manure, green manure and compost, which were available in plenty with virtually no cost. But the use of chemical fertilizers in recent years to increase production has increased the cost of production and contributed to their financial burden. Planters seem to have become addicted to using of chemical fertilizers and pesticides that are easily available in the market instead of labourious process of preparing organic manure. Plenty of money in the boom period made them blind and take recourse to easy methods unmindful of consequences and financial burden.

"The government policies have not helped the farmers, infact, they have affected adversely the planters. The government has to provide for the labour class with housing, maintenance and the basic facilities, but the estate owners pay for all these facilities. The government has to certain extent provide labour with free education and monthly ration at affordable price - so a labour can sustain" says K. T. Surendra a big planter. "He adds, but now labourer are facing problem as the planters have reduced hiring labour which has created unemployment. It is difficult for an estate owner to survive as he is debts because of rise in the cost in the agricultural inputs"

Some of the owners to raise income for paying interest to bank are cutting timber, which affect ecology. Irrigation is required because of variation of monsoon. Even drinking water has become the problem and may of the planters buy water by purchasing tankers for domestic use. The area is known as giri area and landslides are very common which affects in crop failure.

### **Conclusion**

W.T.O. has affected owners to a large extent. Due to the open market system the planters cannot sell coffee at a higher price as against the fixed price because of the trader or the buyer has an option of purchasing from other markets like China, Vietnam where the prices are low. 2003 was the lowest crop and 2004 is the worst year for coffee planters. The financial situation is very bad as the whole economy of this area is dependent on coffee. If the present situation continuous the whole coffee plantation will collapse and that will affect the survival of labourers, mostly women.

With the international coffee organization disbanded any the quota regime gone, Indian producers were left to themselves to compete for a market. Coffee prices dropped from their highs and producers had to take massive cuts in profits. Coffee exports, from the beginning of the year 2003 till the end of May 2003, stood at 65,149 tonnes as against 1.19 lakh tones during the same period in 2002. Besides, rupee appreciation has played its role in impacting the exports. With export prices denominated in dollars, a stronger rupee lends to lower returns to farmers and reduces selling interest.

It has revealed that the spread and depth of hunger are more in the areas with deficit production and the areas with a large number of people dependent on casual employment as in Kerala, Tamil Nadu, Gujarat and Maharashtra, though these are premia facie not among the poorest of the states. The other factors that contribute to the depth of hunger appear to be lack of non-agricultural employment opportunities and low wages to the labour as in the case of Madhya Pradesh and Bihar.

Effects of WTO on the coffee plantations in Karnataka need in depth study. Not all planters are aware of the impact of the WTO and Global Economic Policies on coffee industry. The changes have been quick and the planters' response to these changes has been no adequate preparation to meet the challenges of new economic policies. The planters like the farmers are in a debt trap. The open market system, dependency on traders, banks for their finance and use of chemical fertilizers has caused havoc on their lives. The consequent change has affected the plantation labour in a big way and has worsened their economic conditions. Permanent labour is a causality giving way to contract labour. Mechanization has led to cut in working days of labour and their income.

The Plantation Labour also has suffered extensively due to distress economic situation that has effected the coffee plantations. The average working days of the labour largely women has reduced by 30%, which was earlier put at 240 working days per year. The reduction in the average working days per year of the women has resulted in reduction of their annual income. This means although the minimum wages remained the same their incomes have reduced and decline in their standard of living causing a great hardship.

### **Public Hearing in Karnataka**

The Karnataka Rajya Raita Sanga in collaboration with the National Commission for Women (NCW), New Delhi, Diverse Women for Diversity (DWD) New Delhi and Research Foundation for Science Technology and Ecology (RFSTE) New Delhi organized the public hearing of rural women on 19th July 2004 at Mandya district in Karnataka state. The main objective of the public hearing was to document the experience of rural women in the background of globalization and WTO agreements. The public hearing was conducted which aimed at mobilizing the solutions from among the affected women themselves, which would constitute an important input for formulating pro-women agriculture development policies.

Thus, this program is an important event in empowering women in decision making and provided them a forum to express how and why they have been marginalized and what needs to be done to bring them in the main stream of development. Around 250 rural women participated they could speak of the entire gamut of their problems, general as well as those pertaining to seed, agriculture, food and water.

Out of 27 districts of the state, rural women representatives had come from 16 districts, including the faraway northern districts of the state, which account for highest number of farmers suicide. Members of different women organizations were also present and many of them spoke about their problems. Similarly women artists, environmentalists, students, rural women and others expressed their grievances. The very fact that these women spoke from 10 a.m. to 6.00 p.m. reflects, how vocal these women were. The feeble voices of women usually unheard at home, sounded like thunderbolts on the dias! Such a huge gathering of rural women and men, itself justifies the public hearing as apt and timely. Eminent personalities from diverse field, such as journalist, activists, academicians, advocates, Raita Sangha activists and NGO representatives were present on the dias.

Since 1991, in the wake of globalization and WTO agreements, the poor strata of the society have been suffering immensely. Women who constitute the poorest of the poor suffered more disproportionately. The WTO import on Indian agriculture, made them suffer much more, their hardship and suffering have increased. They are suffering as producers, consumers as agricultural labourers and cultivators. Problems of drinking water have also increased their hardship.

Sometimes it became difficult to distinguish between gender issues in general and then problems as producers and consumers. Hence, it was not easy to pin down exactly the WTO impact on rural

women. However all the speakers did point out that since 1990 their problems have assumed alarming rates both in terms of depth of reality and its coverage or area spread.

### **Highlights of Public Hearing**

The role of women and their participation in silkworm rearing and the related sericulture work is quite significant. But they are not happy with low prices for their output and also the price fluctuations. One of the speakers commented that they grow silk but can't afford to wear a silk sari, they demanded fair and stable prices for their production.

- All women felt that they cannot fight individually and collective action is a must. They stated that unless they are united and organized, they couldn't effectively fight for justice and to prevent exploitation.
- Depletion and drying up of ground water resources attracted serious attention from almost all the speakers. Smt G. B. Sudha, a lawyer by profession narrated the incidence of acute shortage of water in Bagur village of Hassan district. When the women of the village protested against some mismanagement of water from Hemavathi reservoir, police resorted to the use of brutal force, where in many women sustained injuries and few of them were even arrested by the police. However, the government announced compensation at the behest of some political leaders, the compensation was given to such persons who were not involved in the protest. Thus there was injustice in the distribution of compensation.
- More women representatives from Bellary district explained the hardship of women labourers who work for a very low wage. They also referred to wage discrimination based on sex. They felt that only through women organizations and self help groups, such injustice can be done away with.
- Member of "Spandhana" a women organization of Mandhya district narrated a few rape cases of rural women where the culprits have gone scot free on account of the influence of their money and power. A new thinking on such problem is a must from different perspectives including societal and governmental.
- It is quite satisfying to know that many of the rural women felt that marriage is not the solution for all problems of women, rather it is only a beginning. They said that all solutions to their problems lie in their education, thus the need for women education received top priority in the public hearing programs.
- K. U. Devi from Janavadi Mahila Sangha of Mandhya district spoke about increasing family violence and sexual harassment of women in both organized and unorganized sectors. Police and law can do very little in this respect, the solution lies in social awareness, so she expressed the need for creating such awareness in the society through different mechanisms.

- Majority of the speakers felt that from the past one decade, the prices of most goods and services have gone up. Health services are expensive, education is expensive, seeds and fertilizers are expensive and hence the cost of even rural living has increased. However, there is no steady source of income the cost of agriculture has also gone up significantly. Although they couldn't directly and precisely establish the link between price rise and globalisation the pointers are towards globalization.
- Most women from districts of Northern Karnataka, Bidar, Bijapur, Gulbarga and Gadag - narrated their nightmarish experiences of rain failure, crop failure and farmer's suicide, leaving the entire burden of the family on women. Since several studies have identified the positive links between WTO agreements, globalization and crop failure. Well the influence could be that globalization has caused immense misery to women in general and rural women in particular.
- They told that hybrid seeds (genetically engineered seeds) from seed banks are not dependable; they are prone to frequent diseases, hence demand the use of too much pesticides, which are expensive. Even the pests have become immune to pesticides. This drives farmers to suicide.
- Mrs. Sujatha Nagaraj from Mandya stated that the cost of agriculture has gone up, sericulture subsidies are beset with lot of procedural difficulties and dairying demands huge capital. Milk societies do not purchase all the milk produced by the households and hence disposing off the excess production is the greatest problem. She mentioned that milk price is less than the price of a litre of mineral water! Similarly, marketing of vegetables, especially tomatoes are the greatest problem facing the rural women. She attracted the attention of the audience towards management of surplus production.
- Smt. Chayadevi from Hassan district discussed the problem of potato crop, production of which is costly and crops highly unreliable. The farmer gets around Rs. 600 to 700 per quintal where as a retailer pay Rs. 14 to 15 per kg. The potato chips cost Rs. 100 per kg, where as raw potato costs very less. Why this difference is so high? What is the missing link? A serious points to ponder by experts of agribusiness management.
- Several of the speakers mentioned about dowry deaths, female foeticide and marginalisation of women in decision-making, one speaker made heartbreaking statement.
- In future a female child will lose its right to born, when human rights movement are gaining popularity, how to reconcile to this kind of a situation?
- True, that there are disparities in wages based on sex. However there are also regional disparities in wages. Labourers in North Karnataka gets Rs. 15 to 20 per person per day where as in Southern districts it varies from Rs. 60 to 70 there fore, labour migration is taking place from low wage to high wage districts.

- Smt Madhu Bhusan, an artist of "Vimochana" a women forum stated that commercialization of agriculture has led to more exploitation of women in terms of dowry, increasing drinking habit among men, unethical, influence of mass media on women which may not really empower them, instead make them vulnerable. She also referred to cultural erosion by narrating one incidence of a tribal group called Hakki-pakki in Karnataka.
- Especially rural women from Bijapur district said that five rivers are flowing in their district, but water problem is very acute. Their argument is we have resources at our doorstep, but we are not entitled' to use them. What the government is doing? "Their elected representatives are grossly useless" they stated.
- Majority of the speakers felt that both education and health services are expensive and they cannot afford to buy them and their primary schools and health centers are ill equipped and are not functioning properly.
- They felt that alcoholism among men is increasing significantly these days, which has made the life of women more pathetic although this cannot be directly linked to globalization, commercialization of agriculture invariably contributed to an increase in alcoholism. In this way an indirect link can be established.

#### **Suggestions Emerged From Public Hearing**

- Remunerative prices for agricultural goods
- Emphasis on water harvesting
- Focus on the supply of drinking water and sanitation
- Creating awareness among women regarding the adverse impact of globalisation on agriculture.
- Strengthening of women organizations.
- Increasing agricultural wages: Necessary state intervention in this matter is desirable.
- Women are allowed to retain their right over their seeds.
- Reducing the cost of education and health services.
- Better marketing infrastructure.
- A strong movement to preserve the ecosystem and the native culture
- No privatization of water resources.
- Equal and free access to common property resources (CPRs)
- Involvement of locals by participatory methods.
- Strict penal punishment for cases of crop failure due to defective seeds and pesticides.
- Sensitizing the police, legal system and the concerned personnel regarding women's problem.
- Plugging the loopholes in the Anti Dowry Act.

- Making agricultural credit more simple and reachable.
- Organizing more such public hearing of the grievances of women, frequently and at different places.

Dr. Vandana Shiva Director DWD in her address to the participants suggested that women should have a right over the seeds; they should fight for freedom from credit and just price for their products.

Many of the women activists also felt that there is a need to change the present law, which allows the wife to inherit her husband's property only after his death. They argued that even when the husband is alive, when the 'family breaks down, she must be entitled to have half of the property owned by her husband.

## **2.2 WEST BENGAL**

Apart from paddy, Jute and Mesta is the main crop in West Bengal. West Bengal also produces about 22% of the total tea production in India. The fibre crops have traditionally been produced in countries where labour is abundant and cheap. As a result the production systems have been simple and labour intensive. Role of jute in the country's economy lies in the fact that more than 4 million farm families mostly in West Bengal are involved in jute farming and majority of them belong to small and marginal categories. Importance of the crop can further be assessed from the fact that cultivation of these crops generates employment (seasonal) of more than 10 million man-days per person. Industrial operations of about 73 jute mills in the country are a vital segment of the national economy.

In addition about 0.5 million people are involved in raw jute and finished goods trading and ancillary activities. India has a large demand of packaging material for storage and transportation of food grains and other marketable commodities. Such demand was 1435.1 thousand metric tonnes for the year 2000-2001. After fulfilling such a huge demand, India exported 255.1 thousand metric tonnes of jute goods during 2000-2001 in about 120 countries of the world valued at Rs. 931.71 crore.

Being a natural fibre, jute is biodegradable and as such environment friendly. The principal products such as sacks can be re-used and, as a result may have a secondary value for other users. Despite such positive features, the world market for jute has remained depressed.

In recent years, world production of jute has been about 3 million tonnes per year, of which 3,00,000 tonnes are traded internationally in the form of raw fibre and 9,00,000 tonnes in the form of products.

In the mid 1960s about 20 percent of the world's jute was processed in developed regions. This share has now fallen to around 5 percent. This decline results from the increased concentration of jute processing industries in the major producing and consuming countries of Asia coupled with a decline in overall consumption elsewhere because of the spread of synthetics products.

### **Socio-economy**

Jute cultivation is primarily restricted to India and Bangladesh, accounting approximately for 66 percent and 25 percent respectively of the world production. Jute is grown on around 1 million-hectare land. The land area under jute cultivation has grown two-fold since independence while the production has gone up by 3.5 times. Research and development work carried out by the agricultural scientists during this period has not only resulted in increasing yield (kg/ha) of the fibre but also in improvement

of the fibre quality and shortening the cultivation period. Investigations reveal that the crop pattern jute-paddy-potato is more profitable for the farmers than say paddy-potato-sesame.

The principal outlet of the jute products is in the packaging sector. The Compulsory Jute Packaging Act of Government of India is however in the process of dilution giving way to synthetic product in the sector. Jute fabrics are widely used in India for packaging food grains, sugar, pulses and seeds. Special food grade jute bags have been developed for satisfying stringent international norms of safety.

Jute shopping bags of various shapes, sizes and designs are nowadays a common sight in many towns and cities. Jute-geo-textiles are being increasingly used in India to solve many geo-technical problems. In fact the bio-degradability of the substance is viewed as a very welcome feature as after the useful lifespan, the material can decompose and merge with the surrounding soil. It is claimed that in this process the soil is also enriched. Jute composites are increasingly being used in the railways and in the building sector as weed substitute.

Relatively simple, labour intensive and sometimes very crude techniques are used to convert the fibres into the products listed here, although for some products for instance jute based carpets - somewhat sophisticated technologies are employed. Any cost relief provided by the trading practices as also fiscal measures of the concerned authorities would help the jute and coir sectors to survive.

Most of jute products manufactured in India are consumed in the domestic market. Thus during 2001-02, out of 1615 thousand tonnes of goods produced in the jute sector only 180 thousand tonnes (ca. 11 percent) were exported. The export earning from the jute sector accounted at the turn of the millennium for a meager 0.3 percent of India's export earnings. One of the major constraints to export is the high share of freight costs to the landed price. (Sen and Saha 2004)

If projected state wise, West Bengal constitutes 71.50% and 77.14% of area and production respectively. Bihar comes next in order with 15.24% and 11.89% respectively and Assam holds third position with 10.95% and 9.00% respectively. Orissa accounts for just 1.75% and 1.56% respectively. Other states constitute less than 1 % both in area and production. When the area remained around 0.8 million hectare for the last two decades, the increase in production and productivity are the contributions of high yielding jute varieties grown under improved crop husbandry.

### **The Jute Industry in West Bengal**

Out of 73 jute mills in the country 59 are in West Bengal, providing employment to 2,00,000 workers directly, and approximately 40 lakh jute growers are also dependent on this industry. Of these 59 mills, 5 mills are run by National Jute Manufacturing Corporation (NMJC) Limited and one by the Government of West Bengal. Of late, this industry has been witnessing widespread 'workers' unrest against the most barbaric repression of the jute barons. Lockout was declared in 17 mills and only 10 have been reopened. Out of these ten, in some mills, the management forced the unions to agree to

very adverse terms and conditions to lift the lockout. Again, in some mills, wages were reduced for all categories of workers.

With the increasing trend of lay-off, closure and downsizing of jute mills, the employment scenario continued to be grim. The number of factories and the total employment remained stagnant in recent years. The average daily employment for the years 1996, 1997, 1998 and 1999 was 9,35,503; 8,89,857; 8,91,179 and 8,85,788 respectively while the number of factories in the same period was 11,047; 11,238; 11,441 and 11,720 respectively.

The employment of women in factories is gradually decreasing. The average daily employment of women workers in the years from 1995 to 1999 is 22,687; 22,580; 22,203; 22,470 and 21,270 respectively.

The National Jute Mill Corporation (NJMC) Ltd. runs five mills in West Bengal and one in Bihar. The production in these mills has been adversely affected due to non supply of raw jute and other inputs as the Government of India has curtailed budgetary support for this purpose, resulting in increase in its losses. The workers and staff are not getting their wages and salaries in time. The statutory liabilities of this corporation as on 1-1-2001 are as follows: provident fund and pension dues approximately Rs. 55.64 crore, ESI dues Rs.17.63 crore, tax dues Rs. 1.16 crore, salary and wage dues Rs.17. 51 crore (wages of three fortnights due to the workers and salaries for two months due to officers and staff), and gratuity dues of about Rs. 5.94 crore to 702 workers.

This decision to dilute the Jute Packaging Materials Act implies substituting jute with plastics for packaging, to the detriment to environment and jute industry. West Bengal Chief Minister Buddhadev Bhattacharjee has asked the Prime Minister's office to review the decision, which would affect about 2.5 lakh workers and over 40 lakh farmers of the state.

### **Economics of Jute Cultivation**

As per an estimation made during 1999, the maximum share in the cost of cultivation was on human labour (74.12%) followed by bullock/power (8.58%), fertilizers (6.89%), irrigation (5.56%), insecticides (2.15%) seed (1.42%) and Gross manure (1.28%). The maximum cost was on weeding and thinning (37%) followed by extraction (20.11%) bundling, carrying and steeping (13.50%) harvesting 11.70%) land preparation, (4.72%), drying, bailing and storing (3.30%) irrigation (2.86%) and insecticide application (1.90%). The labour cost on fertilizer application sowing and marketing was just over one percent each. The cost and return from jute cultivation per hectare is given below: (Das and Hazra 2002)

|  |       |
|--|-------|
| Average yield :                              |       |
| Jute fibre                                   | 2730  |
| Jute stick (kg/ha)                           | 5670  |
| Cost of jute cultivation (Rs/ha)             | 19580 |
| Sale Price :                                 |       |
| Fibre (Rs./100 kg)                           | 910   |
| Stick (Rs./100 kg)                           | 70    |
| Gross Income (Fibre + Stick)                 | 28812 |
| Net return over cost of Cultivation (Rs./ha) | 9232  |
| Cost of 100 kg fibre production (Rs.)        | 717   |

Farmer's Income : Return over cost of cultivation Rs. 5363 pa. ha

In the form of jute stock Rs. 3969 pa.ha.

Saving in the form of family labour i.e. 35% of Rs. 14515 = Rs. 5080 pa. ha.

### **Tea Production**

India is the world's largest tea producer and tea from Bengal is considered as the best. In India, tea is grown in 15 states. Among these the largest producers are Assam (50.7 percent), West Bengal (22.1 percent), Tamil Nadu (15.9 percent) and Kerala (8.3 percent). Besides the traditional small tea segment in South India, in the recent past a large number of small farmers in Assam, North Bengal and Bihar have switched over to tea. There are now more than 1,10,000 holdings accounting for 18 percent of the all India tea production.

Production during 2000 was 846 million kgs (M. kg.) and the estimate for 2001 is around 850 million kgs.

India accounts for 20 percent of the total area under tea in the world. 20 percent of the total area under tea in the world, 28 percent of world production. 22 percent of global tea consumption and 15 percent of the total global tea exports. The total area under tea is 507200 hectares. Acreage has grown at a rate of 0.6 percent in the last five years. Production has been growing steadily at 2 percent since 1995. The tea industry provides direct employment for one million workers of which a sizeable number are western. (Bariah 2002)

More than two million persons derive their livelihood from ancillary activities associated with production, value addition and marketing of tea. Substantial foreign exchange earnings (Rs. 1850 crores) with negligible import content and contribution to the state and central exchequers (Rs. 1,100 crores) are the other significant economic features of the Indian tea industry.

India is the world's largest consumer of tea, consuming over 600 million kg annually. Per capita consumption is 660 grams per annum. With a penetration rate of 77.2 percent - urban penetration: 90 percent and rural penetration 72.6 percent, tea continues to be the most popular and widely consumed beverage within the country. Consequently, India is only the 4th largest exporter in the world. Export performance has declined in recent times. Since 1998, the export volume has dropped at a CAGR of - 1 percent and export value dropped at a CAGR of 9 percent.

Until 1987-88, tea was the most significant export item from India. By accounting for 20.7 percent it ranked number one among agricultural exports but thereafter it started declining and now it occupies the 3rd position by contributing 8.8 percent of the total agricultural exports. Similarly its contribution to GDP has declined from 1.24 percent in 1950-51 to 0.33 percent in 2000-01.

Export of the Indian tea in the early fifties had 45 percent share in the world market. It was the time when exports were at modest 206 million. This started showing downward trends from 1998 onwards when India's share slipped to 17 percent in the export market. There has been wide fluctuation

in the export volumes ever since. But the dismal export performance was much pronounced in 2000. The experts witnessed a sharp decline from \$ 542 million in 1998 to \$ 424 million in 2000. This further went down in 2002-03 touching \$ 209.8 million.

In rupee terms, the earnings eroded from Rs. 29184 crore in 1998-99 to Rs. 111036 crore in 2002-03. Sustained low quantity of exports has brought it down to 14 percent of the world's export market. The worst happened when the CIS countries, biggest export market of Indian tea, undertook a paradigm shift in the buying patterns by its increased bias towards CTC varieties. Ironically, the preferred export commodity accounted only to 20 percent of the Indian crop at approximately 160 million kg., leaving the country with small quantity of export crop.

The lost market has been captured by competitors mainly Sri Lanka, which makes high value orthodox varieties to be blended with low value fillers collected from India. Sri Lanka has established its branded Dilmah packet teas in Russia, India's major market.

It is now selling teas at Rs. 15 from Rs. 25, much below the cost of production. The southern region comprising of Tamil Nadu, Kerala and Karnataka, produces roughly 24 percent of the total tea production of the country. Similar cases were reported from Dooars, Terai, Bengal and Cachar in Assam.

**Table - 2.2 (1) : Indian Tea Production and Sales**

| Qty. in million kg. Value Rs. Crore |                   |          |           |         |         |                 |
|-------------------------------------|-------------------|----------|-----------|---------|---------|-----------------|
| Year                                | Production<br>Qty | Export   |           | Import  |         | Domestic<br>Qty |
|                                     |                   | Qty      | Value     | Qty     | Value   |                 |
| 1999-2000                           | 835.35            | 192.44   | 1932.66   | 10.36   | 61.97   | 638             |
| 2000-2001                           | 848.36            | 203.55   | 1889.78   | 15.29   | 95.47   | 658             |
| 2001-2002                           | 847.25            | 190.00   | 1695.78   | 16.02   | 82.70   | 679             |
| 2002-2003                           | 709.19            | 128.89   | 1110.36   | 16.98   | 78.20   | —               |
| (Apr-Nov.)                          | (741.87)          | (129.27) | (1191.04) | (11.23) | (61.16) | —               |

**Problems:**

Today the overall world tea absorption is lagging behind supply resulting in an over supply situation. World supply has grown at a CAGR of over 3 percent since 1995. World absorption has grown at a CAGR of 2.5 percent in the same period leading to worldwide softening of tea prices. Reduced price realizations are threatening the profitability of producers the world over.

Declining exports and increasing production place tremendous pressure on prices leading to continued loss in profitability, loss in foreign exchange earnings. The health of the industry, thus, has an immediate socio-economic impact in the remotely located tea growing areas of the country. It is

therefore critical for the industry to immediately adopt sustainable and low cost developmental strategy for improving production.

As India shines, the Rs. 5000 crore worth tea industry losses its sheen with price realization down and costs rising. In 2003, several violent incident and lockout were reported across the tea industry, the loss at least 50,000 man days (Gokhale 2003)

A survey conducted recently has indicated that the small tea grower is getting a very small share of the total price paid by the consumer. Since the bought leaf factories as well as the small tea growers belongs to an unorganized sector of teaproduction, their transactions are not very coherent and well structured and lack group action and bargaining power.

### **Starvation Kills Hundreds of Tea Garden Workers in West Bengal**

Around 800 tea garden workers have died of starvation, with several surviving on wild roots and rats in West Bengal, where the closure of uneconomic plantations has rendered a million labourers jobless, says a rights group.

The deaths resulted from a combination of starvation, malnutrition, general debility and diseases among workers in abandoned tea gardens in north Bengal. At least 25 tea gardens in north Bengal were closed during the past three years turning more than a million workers jobless, after their managements decided to shut down operations citing poor economic viability.

There are an estimated 160 gardens in north Bengal, which accounts for about 30 percent of India's annual tea production of 82.3 million kg. But the sagging global market for tea has drastically impacted India. The \$ 1.5 billion-a-year India industry is tottering following a crash in prices in weekly auctions, besides a slump in exports. The slump has affected the labourers, a large number of them being women. Some of the workers were surviving on wild roots, rat5 and snakes. (Bhatnagar, 2004)

The cut in prices is largely attributed to inferior quality tea being produced by various Indian gardens. Exports have decreased because 'of competition form cheaper beverages Sri Lanka, Kenya and Bangladesh.

The labour trouble in the tea industry is symptomatic of the crisis in the tea industry. Few examples will he suffice to illustrate the situation of tea industry. On November 6., 2003 in a bizarre twist in the Dalegaon tea garden in Dooan of Jalpaiguri district of West Bengal, an enraged mob torched the house of a powerful CPI-M Trade Union leader, leaving 21 persons to die an excruciating death after hacking and maiming them. Some were beheaded; others not so lucky had their limbs chopped off. All bodies were charred beyond recognition. Officially 19 persons including two women were killed, but the witness claim that the actual number is 25 (Paraen Yawer 2003).

**Table - 2.2 (2) : Starvation Deaths Till March 2003**

| <b>Tea Estate</b>    | <b>Workers</b> | <b>Date of lockout/<br/>Closure</b> | <b>No. of deaths by<br/>Starvation/ disease</b> |
|----------------------|----------------|-------------------------------------|---|
| Munjai Tea Estate    | 1399           | 06.11.02                            | 70  |
| Ramjhora Tea Estate  | 1503           | 18.08.03                            | 71  |
| Kataiguri Tea Estate | 1869           | 22.07.03                            | 91  |
| Dekdapara Tea Estate | 802            | 22.08.02                            | 67  |
| Rahimabad Tea Estate | 1000           | 17.04.02                            | 88  |
| Supriya Tea Estate   | 436            | 20.01.03                            | 10+   |

(Source : *Sen Gupta 2004*)

No one imagined the issue of recruitment of three staff in the garden would lead to an incident of such appalling problems. But the tell tale signs are viable for all to see. Tarakeshwar Lohar, secretary of the local unit of CITU affiliated Japlaiguri Zilla Chaikaman Mazdoor union was under pressure from the workers over the recruitment issue. It was alleged that he had managed to get outsiders appointed to the posts. (Paraen Yawer 2003).

To paraphrase of a Biblical saying, "the sins of fathers shall be visited on the children". The sins of the leaders shall be visited on their minions. With the management increasingly minimizing its labour force as a cost cutting, trouble is certain to brew in the coming days.

Consider for instance, the tale of Somari Lohar. The untaught 60-something with a wizened countenance whose literacy hasn't progressed beyond the thumb language. She is just one of the many unlettered in most of the sub-Himalayan bagans (tea gardens). Somari has left walking many months ago and crawls instead. To her, life has halted long before weighed down by penury. Each row of her ploughed face preserves a yarn of abject grief. (Sen Gupta 2004)

Somari's husband was a petty worker on the payroll of the Rahimabad Tea Estate. His family of four plunged into dark days with the babus slapping a lockout 19 months ago. Things worsened with the supply drying up in the company ration counter. Still we had the option to make do with whatever we could find in the forests. But then came the deluge, Somari's husband was bitten by the dreaded malaria bug. It was all over within a couple of days. (Sen Gupta 2004)

Consider the case of Julious Kharia. He died after days of consuming a deadly broth of boiled arbi, wild fruit, tamarind and wild chillies. The neighbors watched on helpless. Julious wasn't poor either, for he also had accumulated dues of Rs. 50,000-plus with the company.

Even as dry statistics rattled out by the State Government and the Tea Board put the number of closed companies at 20 in real terms it is no less than 37 or even more, with many companies paying just a fraction of the staff dues.

According to a rough estimate, over 10,000 workers have been - off due to closure and lockout. The figure could double if they temporary workers are taken in account. The net result over the deaths in the past two years due to hunger.

### **Tea in North Bengal**

183-tea plantation which is about 70% of all the tea estates in West Bengal exist in Jalpaiguri. Of these, 22 plantations have been closed, abandoned or are sick. The earliest date of closure is February 2002 (Kohinoor Tea Estate), so that many gardens have been closed for 1-2 years.

To work in these plantations, young men and women were recruited from Chotanagpur tribal villages. Thus, the tea worker population today is chiefly comprised by tribals like the Oraon, Munda and Santal. In recent years, Nepali workers have also joined the labor force in these estates. According to a 1983 survey, the number of permanent tea workers in Dooars was 150,707, of which over 50% were women. About the same number of women are employed on temporary assignments during the period April - October. The task of tea leaf plucking is the prerogative of these women workers.

The total number of permanent workers in these 22 gardens is 20847 and the total affected population is 94347 people (from District Magistrate's report). Besides this, there are a number of people who used to work as "bigha" or temporary labour in the plantations. They have also been thrown out of work, and their families are suffering. If one were to take the other tea-producing district of Darjeeling, the magnitude of the crisis would become clearer.

**Table 2.2 (3) : Closed Plantations in North Bengal**

| Name of Tea Plantation      | Location                           |
|-----------------------------|------------------------------------|
| Rahimabad Tea Plantation    | Hathipota PS, Jalpaiguri District  |
| Ramjhora Tea Plantation     | Birpara PS, Jalpaiguri District    |
| Dheklapara Tea Plantation   | Birpara PS, Jalpaiguri District    |
| Katalguri Tea Plantation    | Banarhat PS, Jalpaiguri District   |
| Pathorjhora Tea Plantation  | Maljhora PS, Jalpaiguri District   |
| Dima Tea Plantation         | Kalchini PS, Jalpaiguit District   |
| Kalchini Tea Plantation     | Kalchini PS, Jalpaiguri District   |
| Raimatong Tea Plantation    | Kalchini PS, Jalpaiguri District   |
| Srinathpur Tea Plantation   | Alipur PS, Jalpaiguri District     |
| Chamurchi Tea Plantation    | Banarhat PS, Jalpaiguri District   |
| Carron Tea Plantation       | Nagarakata PS, Jalpaiguri District |
| Mujnai Tea Plantation       | Madarihat PS, Jalpaiguri District  |
| Sepoydhoorah Tea Plantation | Darjeeling District                |

| Name of Tea Plantation        | Location                             |
|-------------------------------|--------------------------------------|
| Simulbarie Tea Plantation     | Darjeeling District                  |
| Sayedabad Tea Plantation      | Darjeeling District                  |
| Samsing Tea Plantation        | Makeli PS, Jalpaiguri District       |
| Kohinoor Tea Plantation       | Hathikota PS, Jalpaiguri District    |
| Dhawaljhora Tea Plantation    | Madarihat block, Jalpaiguri District |
| Jogesh Chandra Tea Plantation | Kranti block, Jalpaiguri District    |
| Chongkong Tea Plantation      | Darjeeling District                  |
| Rungnet Tea Plantation        | Darjeeling District                  |

The crisis began in the year 2002, when most plantations closed down; with wages and food rations became irregular for most plantations even before closure. Living in the middle of nowhere with no work other than that available in the tea plantations, workers and their families have been suffering from malnutrition, anaemia and other nutrition related problems. Combined with the lack of medical treatment, the results have been drastic. According to the Agriculture Minister of West Bengal, Kamal Guha stated that "320 workers have died of starvation in the last one year. Besides 50,000 workers of 14 tea plantations are passing their days in distress having been denied food, electricity, medicines and other amenities for months together." Khitish Goswami (a leader from the RSP, another partner in the ruling left Front) placed the deaths at 450 according to a survey done by their labour Union. CITU State Secretary Chittabrata Majumdar (owing allegiance to CPI(M) , the largest party in the ruling coalition) also said that tea plantation workers did not have food or medicine for many months and no other means of livelihood, so they "must have died due to malnutrition and lack of medical care." (Source: The Telegraph Nov. 23, 2003)

Upon closure of the plantations, the food rations for the workers have stopped. As tea plantations are in very interior areas with their workers living on the plantation itself, the abandonment of the plantation by the owners and managers has spelt disaster for the workers. A direct consequence of this plight is that severe under nutrition and high child mortality rates are now prevalent in most tea gardens. Electricity has been cut off and as the water supply was electricity dependent, this has meant that workers receive no drinking water. The labour lines are far away from any other habitation and therefore any other source of drinking water, workers have in some cases have to depend on river water that is unfit for drinking purposes. The women are the worst victims, because they have not only lost the paltry wages (@ Rs. 10-15 a day for the temporary worker) from the tea estates, but also have to gather food and fetch water from a distant water source for their families.

In order to overcome the problem of the workers, the Jalpaiguri District Magistrate, after discussion with the FCI, Food Department, Unions and Management, sent a proposal for a continuation of the Public Distribution System (PDS) to the State Government on 7th November, 2003. His contention was that foodgrains for these families are already available with the FCI (because the tea estates used

to procure the food grains from FCI until closure), and therefore no additional allocation of food grains was necessary. His suggestion was the family ration cards provided by the plantation management be treated as temporary BPL ration cards and that the workers be tagged to the concerned ration dealers directly. He suggested that the State Government provide subsidized food grains to the families against these cards. The State Government has not taken any decision on this suggestion so far (Source: Sramik Samhati Kendra, m;meo, 2004).

### **Case Studies of Farmers of West Bengal**

The agricultural scenario in the State of West Bengal is one of declining crop yield and increasing strife for small holding peasant farmers. Subsistence farmers find it imperative to search for a secondary occupation, and many of them seasonally migrate as wage labourer in neighbouring districts.

Over the past decade (1994-2004), the use of agrochemicals in farms has increased at least two times in the State. Monsanto company has introduced its glyphosate herbicide to rice farms, although its use is most intensive in tea gardens of North Bengal.

The drive for earning more has pushed all subsistence farmers to growing at least one cash crop like potato, sugarcane and jute. While traditional multiple cropping system involved cultivation of several oil seeds, pulses and vegetables, modern monoculture of rice or wheat has eroded the local crop diversity. Farmers are crucially dependent on hybrid seeds supplied by the government and MNCs. This in recent years has occasioned several disastrous results for the farmers. In what follows we describe a few cases of agricultural setbacks as a result of selected cash crops.

#### **Potato**

The profit : cost ratio for potato, according to State agriculture officers, is 1.02. This narrow margin of profit, and the high production cost makes potato farming a highly risk-prone venture for most farmers. The risk has proved itself in a spate of farmer suicides in Dinhat of Coochbehar district, Jamalpur of Bardhaman district, and Chandrakona of Medinipur district - all in the period March-April 2004.

In the case of potato, it is not less production that has caused farmer suicides. On the contrary, it is overproduction, which belies the prevalent myth that more production means prosperity. Overproduction of potato has often caused strife and hunger among farmers. Biman Adhikari, President of Kishan Sabha of Chandrakona recalls, "Back in 1997, an overharvest of potato caused a dramatic fall in prices. Women of farmer households used to hide all vials of pesticides from their menfolk."

In 1998-99, the cost of production was Rs. 12090.00 per acre; In 2003-2004, it has doubled to Rs. 24000.00 per acre. Yield has been at about .120 quintals per acre. The State production figures reveal that the total production of potato was 8,500,000 ton. However, the cold storage capacity is only 4,200,000 ton. Market glut, contributed by overproduction results in distress sale. After home consumption of the produce, most of the remaining potatoes are sold at a throwaway price - even 0.50 paise per kg.

Shib Choudhury of Birbhanpur of Chandrakona block of Medinipur district committed suicide because he failed to sell his produce. All middlemen refused to buy his potatoes because all the cold stores were full to the brim. Rekha Choudhury, widow of Shib Choudhury, recalled how he had been depressed when he saw the potatoes rotting in the fields. Even his attempts to sell them at a distress sale price failed, because there were no buyer.

Nimai Poiria of Khetua of Medinipur district also attempted to commit suicide. His wife Bandana rushed into the room and snatched the bottle of pesticide away from him. Nimai reported that he had borrowed Rs. 18,000 from the cooperative society and another 6,000 from friends. "In addition, I had sold off rice from the previous season to collect Rs. 12000, only to farm potato. And now the wholesalers refuse to take anything. What should we do?"

Sheikh Saifuddin of Hosenpur, Bardhaman district also committed suicide on the 13th April. When inquired about the incident, the District Superintendent of Police became angry with the reporters: "Are the press reporters willing to turn this State into Andhra Pradesh?"

Saira Bibi, widow of Saifuddin, reported that he had borrowed a huge sum of Rs. 48,000 from Jot Sri ram Samabay Samiti, and Rs. 22,000 from various sources. On the 13th a mahajan came to his house to ask for repayment of his loan. Saifuddin went out with him. After an hour he returned home and drank a bottle of pesticide.

The hailstorm of the 12th and 19th March perished all the crop of farmers. Like Saifuddin, most of the farmers are now unable to repay the loan, and consequently, cannot begin sowing of jute. While most of the potato has perished in the hailstorm, the remaining produce cannot be sold, because there is no buyer.

In Coochbehar, too, overproduction of potato is a cause of concern for both farmers and wholesalers. Most farmers have failed to sell their produce. Those who have been fortunate to sell have paid Rs. 80 per quintal of potato just to keep their potatoes in cold stores. After having borne the cost of production @ Rs. 24000 per acre, the cost of transport and cold storage charges, farmers have incurred a great loss.

### **Sunflower**

This season, agriculture officers gave sunflower seeds to farmers in Medinipur and Bardhaman districts as an alternative cash crop.

The State Seed Corporation (SSC) procured hybrid sunflower seeds from Sheetal, a private firm based in Bangalore. The hybrid variety, Surya-51, is reported to be a high-yielding, but has turned out to be a disaster for farmers of Bardhaman and Medinipur. The crop plants flowered well, but yielded no seeds.

On the 24th May, 2004 depressed farmers of Chandrakona block in Medinipur district burned their sunflower plants to ashes in 3 acres of land. The Agriculture Department is in jitters after this

incident. The Sub-Divisional Officer and District Agriculture Officer assured of starting an investigation into the quality of the seeds. Block agricultural officers have been instructed to conduct a field study to investigate into the fate of sunflower cultivation in their respective blocks.

In Bardhaman, farmers have also experienced zero yield from the Surya-51 seeds distributed by the SSC. Mr. Ananta Hajra, a Sub Divisional Agriculture Officer, reported that sunflower farmers from seven blocks of Bardhaman district Khandaghosh, Memari 1, Memari 2, Bhatar, Jamalpur, Aushgram 1 and Aushgram 2 - have experienced zero yield of crop. They are now preparing to move the Consumers Redressal Forum to demand adequate compensation for the loss. Each of these farmers had spent Rs. 9000 per acre for growing sunflower on their farms.

### **Return to Sustainable Agricultural Practice: A Case Study from Bankura District**

In Kalyanpur village of Bankura district, farmers have realized the futility of growing modern HYV rice. The escalating cost of production and the diminishing crop output has made rice farming a discouraging venture. Farmers report that every year they are facing persistent occurrence of pest insects, which had earlier been only a minor problem. They had to substantially increase both the dosage and frequency of pesticides application, but that would kill the whole range of beneficial organisms.

Asit Dey, a middle aged farmer of Kalyanpur, is 'the first of the villagers to have stopped chemical agriculture. He remembered his doctor's warning some 15 years ago that he had fallen sick due to pesticide-applied rice and vegetables. Since 1990, he stopped growing HYV cereals and using chemical pesticides. "I find that my health has improved ever since we stopped eating HYV rice", he said. His wife Maya says that she can now enjoy the "real taste" of traditional rice varieties Asit Kalma and Dahar Nagra - because her family has abandoned growing the bland HYVs.

Asit grows rice in a dry upland farm. He cannot afford to grow bora (summer rice) after the aman (winter rice) harvest. Bora rice needs a lot of water, which is a scarcity in the area in the summer. Thus, he has begun growing mustard and sesame, because neither requires irrigation, and both can be cultivated after the aman harvest. Moreover, these oilseeds provide nutrients to the farm. Maya, his wife is a strong support in his decision to change over to traditional crop seeds.

Asit also is a breeder: he collected a local variety from Medinipur, and improved its characteristics by selective breeding. Fellow farmers of the village have named the variety "Asit Kalma".

The Navdanya team conducted two farmer workshops in Kalyanpur in 2002, and persuaded farmers to stop chemical agriculture. After an assurance of technical support in the event of pest or disease outbreak, 20 farmer households of the village started Organic farming involving folk crop varieties, Organic inputs and rotation of various crops. Asit Dey's farm served as a model for the new "converts". In 2003, the crop output was more than satisfactory. In Asit's farm, the yield of Asit Kalma was at par with the Swarna (a HYV) rice grown on his neighbour's farm, at a comparatively miniscule

production cost. This success convinced all the villagers, and most of them have now stopped growing HYVs.

With his decade of experience of positive results from Organic farming, Asit Dey is convinced that growing folk rice varieties following traditional techniques of Organic cultivation is profitable, healthy and ecologically sustainable. At any workshop and meeting with farmers, Asit is a source of inspiration for the young generation of farmers. He has dissuaded young farmers from using herbicides and pesticides in the village farms.

### **Globalization's Impact on Farmers in West Bengal**

The focal impact of globalisation on agriculture has percolated to several aspects of the rural economy as well. The cultural aspirations and lifestyles are intricately linked to livelihoods. Therefore, the impact of globalization is likely to be perceived in the rural cultural milieu. To understand the real-life situation at the grass roots level, a small survey was conducted in the state of West Bengal.

Change in household income from agriculture over the period from 1994 to 2004 was estimated as the increase or decrease in the profit margin. The 'profit margin' here is defined as the difference between the sale price of crop produce and the total cost of production (including seed cost and cost of agrochemical inputs and labour. In case of negative value in the profit margin, it is imperative that the farmer would either borrow from a local money-lender or bank, sell off or mortgage his/her property or migrate to other districts in search of a secondary livelihood.

The overall result shows a definite decline in the percentage growth in profit margin over the decade 1994-2004. In Jalpaiguri district, a staggering 86% of farmers have experienced a decline in the rate of farm income. In Bankura district, this proportion is 82% and in Howrah district, it is 56.3% of the sampled number of households. All small holders have incurred a fall in profit margin. Even among these wealthy farmers, several have experienced a reduction in profit margin over the decade. However, for a handful of farmers, profit margin has been positive (implying that profit margin has increased), but such positive change has been fortuitous and confined to rich farmers. Only 18% of Bankura farmers and 44% of Howrah farmers have made a higher profit margin in 2004 than in 1994.

A positive growth in profit margin has taken place on farms where crop diversification was practiced. In Howrah, a greater proportion of farmers experienced positive growth in profit margin because farmers there have turned away from rice monocultures and are growing a diversity of crops. However, the profit margin is not particularly high in diversified farms because (a) the crop output was reduced due to pest attack and (b) the market price of the produce fell. The pest attack in most of the farms was not controlled by the use of synthetic pesticides, which only increased the cost of production. In one instance the production cost was considerably reduced, resulting in 11.2% rise in profit margin. A similar instance was found in Howrah district, who owned 5 bigha of land, her insistence on eliminating chemical pesticides caused a 19.8% increase in profit margin.

The amount of loans has increased over the past 10 years. The source of loans may be banks, various government credit schemes, and private moneylenders. Farmers make loans primarily to buy costly agrochemicals and implements like diesel pump sets and hand trawlers. Another reason for borrowing is a daughter's marriage. Marriage on dowry is rampant even among the scheduled caste communities, who earlier observed the custom of bride price. The widespread custom of dowry compels the farmer to make a huge amount of loan just in order to climb the social ladder of prestige.

The above analysis shows that over the period 1994-2004, the drive for market liberalization and globalization has severely impinged on the rural household economies. The traditional mode of agricultural practices has been obliterated. Of course, the Green Revolution of the late 1960s and 1970s had already set in the process of replacing all traditional farming knowledge and practices of seed saving. However, the recent economic system giving a free hand to MNCs in agricultural sector has caused a rapid shrinkage of the traditional practices and replacement of folk crop varieties by HYVs and hybrid varieties. This has obviously escalated the cost of agricultural production, while stagnating productivity.

Besides, they're a direct financial deficit of the farmer's household economy, which is a macrocosmic reflection of the national fiscal situation. Rising costs of inputs, declining productivity of crops, plummeting market price of farm produce, breakdown of the state protection of farmers' interests (through withdrawal of state subsidies), and the loss of farmer's control over means and conditions of production have resulted in a general decline in the profit margin from agricultural activity. The study shows that smaller the holding, the greater the decline in profit margin.

### **Public Hearing in West Bengal**

The Public Hearing began at 11 am after 138 participants from different parts of the State had arrived in small groups. Owing to a thunderstorm that disrupted railway overhead cables in south Bengal the previous night, many women from South 24 Parganas were unable to arrive. The participants hailed from Bankura, Birbhum, East Medinipur, West Medinipur, Nadia, Purulia, North 24 Parganas and South 24 Parganas districts. A majority of them were farmers, but a few represented a section of migrant labourers who had been dispossessed of their lands by industrialization and modernization drives over the past decade. All participants belonged to networks of Shramajibi Samiti (SMS), Madhyamgram and Centre for Interdisciplinary Studies (CIS), Barrackpore.

The panel of the Public Hearing was composed of Dr. Vandana Shiva, recipient of the Right Livelihood Award and FAO Medal, eminent writer Mahasweta Devi, winner of Sahitya Academy Award, poet-columnist Jaya Mitra, renowned activist Sri Samar Bagchi and ecologist Dr. Debal Deb.

Karuna Prasad, a poet and singer, inaugurated the program with two songs. His songs were composed on the themes of bio piracy of Indian crops and herbs by MNCs, and the urgency of saving local crop genetic diversity.

In her introductory address, Dr. Shiva explained the objective of the Public Hearing. "We shall hear and document the women's first hand accounts of the impacts of Globalisation on their lives and

livelihoods," she said. A part of the four such Public Hearing is of social importance because "it is the women of Bengal who spearheaded the famous Tebhaga movement of the 1940s," she recalled, "whose slogan reverberated: 'Pran debo tobu dhan debo na.' (We shall give our lives, but never our rice)". Dr. Shiva spoke in Hindi and renowned Bengali writer Jaya Mitra translated her words.

Dr. Shiva told the women that it is the Bengal women who upheld and secured their rights to land and crops of their labour through much sacrifice. "I am hopeful that I shall the women of Bengal who have retained the legacy and spirit of Tebhaga. I know there are certain areas of West Bengal where many farmers are still growing indigenous crop varieties outside the encapsulating system of modern industrial agriculture. I know there are many communities who resist and defy the destructive forces of modernization, the market and Globalisation. We are here to record the women's experience of the struggle against aggressive inroads of MNCs into our culture." Dr. Shiva called on the participants to brood another freedom struggle to protect women's rights over land, occupation and culture.

She informed the participants that the NCW will organize a National Conference of Women in Delhi, where opinions of West Bengal women will be considered as a major contribution to the future policy making exercise.

Mahasweta Devi in her speech recalled that many farmer women had sacrificed their lives in Kakdwip of South Bengal during the Tebhaga movement. She recalled that the women of Tebhaga had taken the bold oath to preserve their "seeds sown in our blood" and refused to give the share of their farm produce to landlords. Mahasweta Devi said that the British rule had manufactured the Bengal famine by hoarding food grains and stepping up food prices. "Today a new type of famine is being manufactured by the globalised market," she warned. Mahasweta Devi eloquently explained to the participants the plight of indigenous people in West Bengal and other States. She told how processes of commercialization and modernization have dislodged traditional land use systems and have intensified the exploitation of women, leading to unforeseen consequences for both indigenous people and their resources. "Globalisation is destroying all natural resources," she said, "on which the rural poor depend for survival. Real estate developers are filling up wetlands. Earlier people knew which pond's water was good for drinking and cooking. Now the ponds and the knowledge of sustainable use of these ponds are vanishing. Nevertheless, it is the poor women who are capable of resisting the process of destruction. Women of Dinajpur have stopped an attempt to dam the Punarnava River. It is these women, upholding the legacy of Tebhaga martyr Ahalya, who march in the forefront in the struggle of resistance to imperialism." She called upon the participants to fight, as mighty women in many parts of the world do, the evil force of Globalisation.

Dr. Debal Deb of CIS described how the WTO has opened the floodgate of bio piracy of the wealth of biodiversity and traditional knowledge pertaining to the use of local biodiversity. He explained that the current Globalisation process began with the Green Revolution, which sought to compel the country's farmers to depend on multinational corporations for seeds, agrochemical inputs and pump sets for irrigation. "Within 30 years of the Green Revolution," he said, "thousands of folk crop genetic

diversity, indigenous knowledge of sustainable land use and traditional systems of food security disappeared. Following WTO, this process of destruction has been intensified by untested GM seeds and toxic agrochemicals. He recalled that the Green Revolution had sought to increase food production and eliminate poverty and hunger. He noted that bumper production of cereals has led to rotting of food grains in warehouses, while endemic hunger in pockets of Orissa, Andhra Pradesh and Maharashtra persists. He said, "Today we all witness that even bumper production of food crops lead to indebtedness, poverty and suicides of farmers. Overproduction of rice, tomato and potato over the past decade has not reduced food prices on the market but has drastically reduced the sale price of farm produce, resulting in a cascade of farmer suicides."

Dr. Deb added that the WTO has paved the way for enclosing and commercialising common property resources, and stealing the traditional knowledge base pertaining to local biodiversity. Dr. Deb termed Globalisation as "a regime of plunder of resources of the poor for the prosperity of the corporate empire." He pointed out that bio piracy of local knowledge began with the Basmati rice, neem and turmeric, the latest instance being the Indian wheat variety whose patent is held by Monsanto. He estimated that over 160 indigenous crops and herbs and their traditional uses have been patented as corporate innovations. He called on all participants to rise against this regime of bio piracy and the political system that fosters and facilitates corporate plunder of the nations resources.

Sri Samar Bagchi of NAPM expressed concern that under the regime of WTO, the Indian farmers will soon lose their autonomy and become enslaved by MNCs for the supply of seeds, agrochemicals and implements. He called on all participants to freely share their experiences and boldly express their opinions, which will be documented for discussion at the Union Government level in Delhi.

A total of 17 women including 2 Santal women recounted and shared their first hand experiences of enclosure of the commons, displacement from ancestral land, drastic changes in traditional land use practices. They clearly linked these changes to plummeting water table, salinisation of soil, rising cost of foods and loss of livelihoods. Their accounts gave a different set of instances of India "shining" - a different portrait of industrial progress, which was coupled with illegal land transfer, marginalization and prostitutionalization of women' and disempowerment of the poor.

Kalpana Sardar of North Parganas district said that export-oriented prawn farming has destroyed farmers' livelihoods. "In the Sundarban area, fertile crop lands have become converted into shrimp farms. Entry of salt water into, rice farms has destroyed farm productivity. Prawn farms have also reduced farm labour employment opportunities." She told that 100 bigha (33 acres) of rice farm requires 2700 labourers whereas the same amount of jalkar where tiger prawns are farmed employs just 15 labourers. " Emigration of villagers is on the rise in search of employment: Many women are driven to prostitution to save their families from hunger."

Jahanara Bibi and Palina Pramanik of Minakhan Block of North 24 Parganas district reiterated Kalpana's account, and added "Women of our villages are all unemployed ever since the beginning of

farming of tiger prawns. Salinisation of land has led to the disappearance of brushwood for fuel. Household expenses for fuel have escalated because people must buy kerosene oil." They reported that while small farmers are willing to grow rice for subsistence, they couldn't afford to sow crops because of leakage of salt water from neighbouring prawn farms of rich farmers. They also recounted stories of sexual harassment of women who are employed in tiger prawn processing units.

Budhu Tudu, a Santal woman from West Medinipur district revealed in her account another side of exploitation of women. The introduction of machines like tractors and threshers has reduced employment of women in farm work. Those who are employed, do not receive the wage at the rate stipulated by the government, and have to work overtime in order to make two ends meet. She further added that chemical agriculture has poisoned all cultivated crops as well as wild edible plants, small fish and even drinking water.

Fazila Bibi from Nadia district reported that monocultures of commercial crops like sunflower has replaced in her area a wide diversity of rice, pulses and vegetable crops, which has ensured food and nutritional security to the rural poor in the past.

The women's speeches were interspersed with traditional folk songs. SMS participants also recited many mass songs they composed on the theme of farmers' rights.

SMS women also staged a drama skirt, in which they identified Globalization as erosion of biodiversity, loss of seeds, loss of farmers' rights, commercialization and devaluing women, and fattening of industrialists.

Shikha Mandal from Kulpi block of South 24 Parganas district described another instance of development that fosters and exacerbates poverty. She said, "Local people were losing employment because work is afoot to build a 'port in Kulpi. About 60,000 bigha of farm plots will be taken over by the port authority. This will disemploy and displace thousands of local people."

Suniti Bhattacharya from Bishnupur Block of Bankura district articulated how the on-going process of modernization of agriculture has destroyed traditional knowledge of seed saving and sustainable farming. She told that women's traditional knowledge of drying and storing seeds in earthen pots, of protecting them from pest attack and retaining viability of the seeds are now being forgotten. "In the past," she said "women decided which varieties of rice would be grown in their home gardens and farms to provide nutrition for their family members. Modern market-dependence of farmers for seed supply has robbed women of their decision making power. The introduction of HYV seeds and machines has marginalized women's role in production, and hence devalued the. This devaluation is reflected in the abolition of 'bride-price' customs in many indigenous societies and in the rising frequency of dowry crimes."

Ashalata Das from South 24 Parganas reported that traditional fishers have lost their occupation because of Crocodile Project in the area. The local people are migrating out to distant townships in search of employment.

Minati Mandal from Namkhana Block of South 24 Parganas district gave a similar account of shrinkage of employment opportunities in her area. She went on to say that overuse of pesticides has adverse health effects on the livestock as well as humans, especially children. Her account revealed another aspect of India Shining: "The number of tube wells is less than one each for 250 or more people. Water table is falling, drinking water is becoming saline and contaminates with arsenic. Government health centres no longer distribute medicines for common ailments."

Joynur Bibi from Pathar Pratima Block of South 24 Parganas district recalled that in her childhood she has seen irrigation systems using surface water, that was sufficient to feed everyone in the village. Over years of negligence, the village ponds and tanks have dried up, with their water holding capacity significantly reduced. Rich farmers are using electric pumps to extract ground water for boro (summer rice) cultivation. Intensification of HYU rice has replaced vegetable diversity on farms. She said that productivity of farms has declined over the past decade, and agriculture has become too expensive. "Pesticides fail to adequately control crop pests," she added with bitter jest, "people use them with greater confidence to commit suicide."

Joynur Bibi went on to say that village Panchayat bodies to indulge in political favouritism and corruption manipulate BPL lists. Thus benefits of various governmental programs of rural development do not reach the poor. Each poor family is entitled to receiving 35kg of rice under the Antyodaya Yojana. The old are supposed to get 10 kg of rice free under the Annapurna Yojana. A sum of Rs. 500 is allotted for poor women who are pregnant. However, in reality, the poor families hardly receive any such benefits. "While Indira Abas Yojana allots Rs. 22,000 for building a house for each poor family, they receive Rs. 10,000 after signing a voucher of Rs. 22,000."

Maya Tanti from the same block reported that the use of sythetic fertilizers has caused compaction of the soil and loss of soil fertility.

Tehmina Begum from North 24 Parganas said that in her area prawn farming and cultivation of HYV tomato and capsicum have engendered the farmers' livelihoods. Fertile farms are rendered useless by salt-water infiltration and conversion into prawn fishery. In the remanding croplands, hybrid capsicum farming has replaced red chilli, which were even a few years ago dried and powdered for sale on local markets. Women who used to earn from red chilli processing are losing their income because of capsicum.

Ashalata Maiti from Sagar Island reported that the Ganga Sagar Mela was this year contracted out to Sahara Company, which raised the fares of all transport vehicles and the rent of space for vendors. Space was too costly for the small businessmen and poor women to sell their wares at the Mela. The Company is also evicting local inhabitants to leave space for erecting a powerhouse and other structures. She added that safe drinking water and cooking was a scarcity on the Island and the number of tube wells is too small for everyone's needs. "People find it imperative to use dirty pond waters for cooking," she told, "and therefore water-borne diseases are common."

At the end of the Hearing, noted writer Jaya Mitra observed that we are now compelled to contemplate our rights over water, land and forest. "It is ironic," she said, " that in a land that receives very high rainfall, people have to buy water to irrigate their lands and that in a land of rich biodiversity, farmers are buying earthworms to enrich their farm soil."

Mitra cited an instance of the impact of Globalisation on village economies of Bengal: "An average village community spends Rs. 200,000 towards cigarettes and cosmetics." She urged that women get over such fads and look into their real needs.

The songs recited by SMS and CIS members concluded the Hearing.

Dr. Shiva said that today's Public Hearing made it clear that Globalisation had caused several problems for survival for the poor, and that the women are themselves aware of these problems. They must find ways to tackle and overcome these problems themselves. "We from Navdanya shall of course stand by them, as we have always stood by rural women in their struggles. But the decision and the means to struggle is theirs. India will shine not by the colourful advertisements of MNCs, nor by the dazzling lies of politicians, but by the brilliant invincible people of India," she concluded.

In the valedictory address, Dr. Debal Deb said that reliance on the Government to solve all the problems is fruitless. Dr. Deb further asserted, "We cannot expect a corrupt government to protect the country's food security. Women are the repository of the wealth of our agro biodiversity and traditional ecological knowledge. They are capable of protecting this wealth from plunder. They can save our cultures."

## Public Hearing held in Ludhiana, Punjab



## 2.3 PUNJAB

Punjab, the state of rivers and canals, known as the granary of India, is located in the North West of India. With only 15% of geographical area of the country, it produces around 22% of wheat, 10% of rice and 8% of cotton of the country.

Punjab has been contributing around 50% of the rice and 65% of wheat to the central pool for more than decades. Of the total geographical areas, 23% is under cultivation with a cropping intensity of 186%. The state has been largest tractor population in the country and the highest per hectare consumption of fertilizer and 96% of the cultivable area is under canal and tube well irrigation. Hence, agriculture in Punjab is not really dependent on the monsoons. (Directorate of Agriculture, 2002 Punjab)

Of the total area under wheat in the country, 13% is in Punjab and 36% in Uttar Pradesh. It is interesting to note that wheat area in the Punjab (3.22 Mha) is slightly less than that in Madhya Pradesh. (3.5 Mha), but the production in Punjab (12.2 MT) is more than double that of Madhya Pradesh (5.5 MT), thereby, highlighting the interstate difference in yield per hectare.

During 2000-2001, Punjab produced 155.50 lac tonnes of wheat, 91.54 lac tonnes of rice, 2.04 lac tonnes of cotton and 97.60 lac tonnes of sugarcane.

In addition to the conventional crops, the main fruits grown are Kinnow/Orange (194,720 tonnes) Mango (56,080 tonnes) Grapes (1,29,316 tonnes), Lichi (11,460 tonnes) and Lemon (4,676 tonnes). The main vegetables grown in Punjab are potato (13,71,516 tonnes) root crops (1,29,316 tonnes) cabbage (15,184 tonnes) cauliflower (78,041 tonnes) and brinjal (33,201 tonnes).

As per the survey conducted by the National Productivity Council of India, the availability of crop residues in Punjab has been of the order of about 300 lac tonnes, which is approximately 10% of the total availability of crop residue in the country. The major crop residues are rice straw, wheat straw, and cotton stalks. In addition, large quantities of agro industrial residues/by products are also available viz. rice husk generated in rice mills and bagasse by the sugarcane mills situated in the state.

To promote the agriculture in the state, the Punjab Government has launched a number of schemes under "Technology Mission" and "Second Push" scheme in agriculture.

### **Schemes under Technology Mission**

- ❑ Intensive Cotton Development Programme

- National Pulse Development Programme
- Oil Seed Production Programme

#### **Schemes under Second Push in Agriculture**

- Promotion of Maize Cultivation
- Promotion of Summer Moong Cultivation
- Program to Boost Sugarcane production

Despite warnings about receding water tables and the futility of continuing with the wheat-paddy rotation, farmers in the paddy belt continue to repose their faith in the water thirsty crop. Reports coming in from the vast fields of Central Punjab, a typical paddy-growing belt, reveal that the area under paddy this year is not going to show any significant decrease, much against the hopes of the Agriculture Department. (Bhatt, 2004)

Rather, in some parts, the area, which was traditionally under sugarcane, is also likely to come under paddy, if one takes into account the disillusionment among the farmers in view of the sugarcane fiasco in the state.

In Patiala district, the 'sathi' variety of paddy, which takes only about two months to mature, has been planted in acres of land, particularly in the Samana block. At Fatehgarh Sahib about 100 hectares of the early variety has been sown, while in Ludhiana, the crop has already covered a good 1000 hectares by now. In Gerozepur too nearly 500 acres of area has already come under early varieties of paddy. This despite the fact that the Johl Committee's recommendations of paying compensation for keeping fields free from paddy wheat variety have been accepted in principle and the modalities are being worked out.

The water level all over Punjab is going down drastically by about two to three feet every year. "In Ludhiana, in places like Pakhowal block, where farmers used to get water at an average depth of 40-50 feet, are going in for submersible pumps this year, because the water level has further gone down".

The situation is the same in other paddy growing districts, including Ferozpur, where the average fall is between 1 to 2 feet and Patiala, where the average fall is between 70 cms to 4 metres! Agriculture Department sources revealed that in Dera Bassi block, a fall of four metres was reported this year, but the area under paddy was expected to remain the same here as well.

The water wastage is maximum during this period because of rapid evaporation of water from the fields. Other problems like power shortage and pumps going dry because of ground water depletion, also hit the farmers during this period, but the farmers do not heed the recommendations under the impression that the crop planted during this period when the day length is more increases the yield of the crop.

Farmers reveal that the Johl Committee recommendations would work well with them only in case the compensation money was enhanced from Rs. 2500 per acre being offered now.

### **Growing Paddy With Less Water**

In Punjab, the demand of water to meet the present production level is about 43.7 lakh hectare meter (LHM). Out of this 14.5 lakh hectare meter is supplied by surface canals where as groundwater recharge provides about 16.8 lakh hectare meter of water. But excessive demand of 12.4 lakh meter of water is met through over exploitation of the ground water by pumping it out with the help of 9.5 lakh tube wells. It has created worst situation in the state, as centrifugal pumps in 28% of the state's area are estimates to be replaced with submersible pumps. As more than 45 per cent farmers of the state are marginal and small having less than 2 hectares of land holdings, it is impossible for them to install these high cost submersible pumps.

Water standing in the fields during pre-monsoon months of May and June increases atmospheric humidity, which enhances the incidence of pests and diseases and further increases the cost of production. More over puddling operation in ponded water before transplantation compacts the sub soil affecting the growth of roots of subsequent crops.

Nearly a sixth of world's total rice grown as upland rice. The largest areas of upland rice are found in India, Indonesia, Bangladesh, China and Philippines, Direct Seeding of rice is practiced in parts of Assam, West Bengal, Orissa, Madhya Pradesh and Gujrat states during pre-monsoon rains, but the yields are very low. Therefore improved agricultural techniques and better water efficiency are key to feeding a speedily increasing population.

Rice crop is considered a water guzzler but instead of maintaining standing water, irrigating the field one or two days after disappearance of ponded water from the surface, can lead to water saving up to 30 percent without any significant loss in year.

In the context of all these situations the agricultural expert at JDM, Agricultural Research and Development Foundation, Ludhiana, in the state have got success in "growing paddy without puddling". They called this technique as "growing paddy harvesting of rain water". (Aulakh R.P.S.2004)

In this technique they raised nursery by the traditional method but transplanted the seedling without puddling the field. This was made possible by making ridges with tractor drawn ridger after preparing the field. The channel in between the ridges were filled with water and the paddy seedlings were planted on lower parts of level. During the first week, the crop was irrigated daily but after that the irrigation was applied after a week or more depending upon the climate. Special attention was made to irrigation at the tilling and grain filling stages.

Dr. Daler Singh, an expert of the team conducting farmer participatory and adaptive researches at this foundation claimed that with technique water could be saved up to 70% and this technique was

helpful in saving soil fauna from drowning. Weeds were kept under control with recommended weedicides of 100 ml of oxyflurofin. With this concept, early maturity and better yield were also got in addition to water saving. The concept is cost effective, labour and time saving and a step towards sustainable agriculture, without adversely affecting the yields.

“What happens in case of puddling is that hard layer is created 6” deep in the surface soil, which does not let water percolate down and recharge the water table. But in fields of paddy grown with this technique, the soil remains loose, roots well aerated and the soil has plenty of earthworms helping in improving the soil health and microbial activity of the soil. Moreover mechanical weeding is also easier as compared to transplanted crop”.

Hence by efficient water management, we can achieve the food security at lower cost and with better quality, both these being the requirements of sustainable agricultural development and the changing world scenario.

### **Field Studies**

Gurman Singh 28 years, a farmer in Alampur village, Rajpura Tehsil said, “Bores up to 60-70 ft have gone dry. Now bores at depth of 250 ft are being used, but the water level is going down. There is sand below 18 ft. of ground level. A ‘nalla’ has been sanctioned by the government to be built in the area, but it cannot be built till the SYL canal is built. The SYL will really benefit this area because it will bring water to our farms. This year due to lack of rain, ‘zerri’ (paddy) has not been planted in this area. He also blames power supply for irrigation pumps which is only 6 hours, and that too it is intermittent supply. The result is ‘no kheti’ in this area. Most of the water of sutlej is going out of Punjab.

Smt Sukhchain Kaur of the same village is worried about the rain. There has been no rain for 2 years and if rain does not come for another year, agriculture will be over in the area. Some villages in the nearby have not found water even at 500 ft. It is becoming increasingly difficult to look after cattle as due to the shortage of green fodder to the animals. Most of the families in the village have stopped keeping buffaloes or are keeping only one buffalo.

According to Shri Lal of Janouya village, all farmers have become poor men. Only 10% of us are still farmers, there is no profit in agriculture. There is no water and all bore wells at a depth of 150 ft have failed now, leaving farmers with no alternative except for rain-fed dependence. The crops of maize and ‘gobi’ (cauliflower) have ruined due to the failure of rain. The farmers of our region want SYL to work, at least in our region, so that the water table level may rise. The farmers along the Bhakra canal do get water. He said that each farmer in his village had 5-15 acres of land on an average but half of them are now below poverty line. They do not now have any capacity to take loan. We do not want loan, we only want the SYL to come to our area.

Smt Sukhbans Kaur aged 50 years of Jansuya village has to tell the same story, there is no ‘chara’ (fodder), growing in the villages as there is no water, so all dairy has stopped in the village.

Even deep water is not available; I go to collect sweet water from a hand pump across the road, as it is the nearest one to me that still has water. I make 5 trips daily to collect only drinking water.

Shri Sham Lal aged 70 years and his wife Shano were grazing cattles when we meet "I was doing farming till 5 years ago. For the last two years, my crops failed, as there was no water, and I am unable to raise loans to dig a deep bore for irrigation. This year I have not planted any crops, so as I have no work, at the fag end of my life I am feeling a deep helplessness" asserted Shamlal.

Near village Jansuya at the flood drain Tikan Suban Nahar, Shri SurlalSingh and Shri Gurcharan Singh were on their flood duty though the drain is absolutely dry. They also do some cultivation in their native village. They blamed the government for not providing new electricity connection. As no new connections are being given for submersible pumps, there is a 10 year waiting time to get new connections, so generators are being used which work on diesel, which is a great additional cost to farmer. With no income, farmers are in heavy debt. Now all moneylenders have refused to lend us money, since you have planted no crops this year, how will you be able to repay the loan? Those farmers with big farms are getting richer, but the small farmers like us are getting poorer.

**Crop Diversification :** Dominance of wheat-rice crop rotation has adversely affected the agricultural economy of Punjab. It has unfavourably affected the ecological parameters of the state. Though farmers try and diversify to other crops, they do not find the right price, and as only the wheat rice have been given a Minimum Support Price (MSP) which shall be declare for other crops too.

The Punjab Agro Foodgrains Corporation was declared the Nodal Agency by the state government to implement the Contract farming Programme with a view to encourage diversification of crops. According to the Economic Survey of Punjab 2003-04, during Rabi 2002, 12,238 acres was brought under the crops of Hyola (hybrid rapeseed mustard with higher oil content, barley (high malt content) and winter maize. An area of 1.75 lakh acres has been brought under the land contract farming programme with corporate houses namely Rallis India, Mahindra Shuhlabh, Escorts and DCM Hariyali were involved in the extension services to the contract farmers. The area for contract farming may further increase to 2.2 lakh acres in 4-5 years.

Shri Sarabjot Singh Dhillon doing contract farming since 2 years on 30 acres in village Malko, in District Patiala. The crops he is growing are maize, barely and mustard (Hyola 501). The scheme is not profitable for him, the companies provides only seed but all other inputs are his own. "The price he get for my crops is lower than the price in the market, for example for mustard, he has given a price of Rs. 1500 per quintal, but the market price is Rs. 2000 per quintal. For maize, he was told that the yield would be 22 quintals per acre, but he got a yield of only 10-12 quintals per acre, as the birds attacked the plants at the time in spite of all methods of scaring them away" commented Mr. Dhillon.

According to Mr. Dhillion, the Punjab Agro Corporation seed is more expensive than the market. For example, Punjab Agro gives the maize seed at Rs. 50 per kg. Whereas in the market it is available

at Rs. 30 per kg. Mustard Hyola 501 seed is given at Rs. 500 per packet for an acre, though at the market it is at Rs. 300 per packet for an acre.

**Diverse crops into the market, it will encourage farmers to diversify to other crops.**

He also wants to diversify into other crops, which use less water and diesel than wheat-rice combine. But since the rate given to farmers in the contract is so low, only 2 farmers in his district have signed the contract. The contract says that the seed be bought only through Punjab Agro Corporation Ltd., but we are free to sell it to others if we are able to get a better price in the market.

Earlier the farmers used to grow 'chana' Bengal grain. But due to various reasons, and better price most farmers turned to cotton. But the American 'sundi' (Ball Worm) had devastated the cotton crop leading to heavy debts. Said Shri Jaspal Singh "there is not even one house which is not free from debt. About 25-30 sprays had to be done on cotton when the 'sundi' struck. Also the traders rule the market, and decide on the price of cotton at their whim. We require an MSP for cotton to save ourselves. We have gained nothing from agriculture except debt, suffering and disease"

**Debts on farmers, farmers' suicides and impacts on gender and households:**

According to the study done by Dr Shergill, the total debt on the farmers in the state is Rs 5700 crore. This debt is 70% of the Net Domestic Product originated in the state in a year. In other words, three-fourths of one year's total agricultural income has to be paid if the total debt is to be liquidated.

The districts of Sangrur, Bhatinda and Mansa which have a high share of farmers' suicides also have a high debt burden. In Bhatinda and Mansa, an average farmer has a debt of Rs. 90,000. The Sangrur district, the commission agents meet 75 % of the total short term credit needs of the farmers in this zone.(from 'Suicides in Punjab' by Institute for Development and Communication)

**Suicide rate :** An in-depth analysis of disaggregate data on Punjab shows disturbing trends. There has been a distinct increase in the number of suicides in Punjab since 1993. In 1992-93, suicides in Punjab increased by 51.97 %. By contrast, the all India average registered an increase of 5.11% only. In subsequent years this trend has continued. In 1993-94, there was an increase of 14%, whereas in India it was 5.88 %. In 194-95, the increase in the case of Punjab was 57 %, whereas in India as a whole there was a decline of suicides. In 1995-97, the increase in the suicides in Punjab was to the extent of 21%, whereas the decline in India to the extent of 19%. It is a matter of concern that the number of suicides per lakh population (i.e., suicide rate) has been steadily increasing from 0.57 in 1988 to 2.06 in 1997. The suicide rate of cultivator farmers as compared with non-cultivators is very high. For instance, suicide rate of cultivator farmers in 1993 was 1.98 % and that of non-cultivators was 0.90%. In the year 1997, the suicide rate of cultivator farmers was 4.49 and non-cultivators 1.82. (Suicides in Rural Punjab, Institute for Development and Communication).

The cultivator farmers' suicides in the districts bordering Haryana, i.e., Sangrur, Bhatinda and Mansa, was to the extent of 61% between 1991-97. The districts in Amritsar, Firozpur and Gurdaspur

have a 25% share of farmers' suicides. Together these two zones have witnessed more than 85% of the total cultivators farmers' suicides in the state.

There is a decline in the size of operational holdings in Punjab. About 45% of the farms are smaller than 2 hectares. Small size holdings have increased from 38.6% to 44.7% in 1991. The increase in the number of marginal holdings (less than 1 hectare) was higher at 7.1%. This is significant because small farms are increasingly becoming uneconomical. Our survey was extensively done in this category of farmers of small land holdings. The women in this sector are crushed under burden of debt taken by their husbands, sons, and brothers. Consequently, they have become psychologically distressed, socially alienated and economically distressed.

As has been reported widely in various newspapers, fragmentation of land and the consequent economic hardship has contributed to distress in families, of which women have to bear the major brunt. The former sarpanch of village Sakrodi in Sangrur district was under heavy debt due to crop damage and in order to pay the debt he wanted to sell some portion of his land. He and his wife were in severe depression due to the debt burden. The situation had become worse when 2 of his brothers separated from him and division of land took place. As the brothers refused to contribute anything towards repayment of loan, he finalized the deal to sell part of the land. This resulted in a severe conflict with his wife. One night before the buyers were to come, he killed his wife with his sword and committed suicide by consuming pesticide.

Another example is of a farmer in Longowal Khurd village (Gurdaspur district) who committed suicide in 1998. In 1994, due to division of land in his family, only 2 acres came to his share. He also had to shoulder the as well responsibility of his sister's marriage, for which he had to sell 5 kanals of his land, he also took loan. He could not return the loan due to crop failure and his child as expelled from school for non-payment of fees. This depressed him so much that he killed himself the next day. His wife could not face the burden of indebtedness and killed herself the next day.

It should be noted that the decision to sell land is always a hard one in village life of Punjab, as it leads to status loss of the seller in the eyes of the community.

In Bangan village, villagers had been facing the problem of crop damage for 5 years caused by floods by a barrage constructed in the neighbouring area of Haryana. The barrage diverted the water from the river Ghaggar towards Bangan and other villages, submerging their fields, causing loss of crops year after year. This threw the farmers of the village into a vicious debt trap, and resulted in an increasing number of suicides. According to the villagers, they repeatedly brought the floods to the notice of the government, but the govt paid no attention.

The fact is that the small and marginal farmers are living in economic hardship, social pressure and psychological stress. It is not to deny that the small and marginal farmer and even the landless laboureres did benefit from the trickle down effect of the green revolution, but they have had to pay a very heavy social cost. In a caste ridden society, penetration of consumerism and its demonstration and widespread effects of dowry has further added to the woes of women in the State.

The practice of dowry is making the small farmer vulnerable and adding to the problems of women. At village Harkishanpura in district Bhatinda, we spoke to Shri Jagraj Singh, Sarpanch. This village has come into the news with having the maximum number of suicides by farmers. Shri Jagraj Singh clarified that it would not be correct to say that the unhappy suicides were due to alcoholism and other such habits. They were solely due to distress of being in the debt trap. He gave us 7 names of the latest suicide victims. They ranged from 55 to 30 years of age.

Shri Jagraj Singh said, "Chana' used to be a crop in the area, but due to lack of rain and lack of water, there was no alternative for the farmer except to switch to cotton. 'Desi' cotton was good for 2-4 years, then the American 'sundi' struck the crops, and did not allow cotton to grow. Each farmer went into debt of one to one-and-a-half lakh of rupees. Now the farmers have sown Bt cotton. This is the first experiment with it for some farmers, or second time for others. However the seed of Bt cotton is very expensive, we need Rs. 2500/- seed for one acre.

The population of the village is 1000-1100, with 80 homes, all belonging to farmers. Out of these, 70 homes who have taken loans have been declared defaulters, so no more loan is being given to them."

Smt Nasib Kaur wife of suicide victim Shri Bada Singh said, as regards my husband's fate, what could I say? We had 1200 kila of land in the village, and he sold off 600 kila at a very low rate in order to repay part of his debt. The humiliation of facing the moneylenders was too much for his pride. We, the farmers of this area, have been cheated by the govt., by moneylenders. Being simple and trusting people, we had expected better care from the authorities. All our pleas fell on-deaf ears. A whole lifetime of my husband's toil was wiped out by 2 years debt.

One of the suicide victims in the village was a young man. He married his 2 sisters, and had to spend a great deal of money on the weddings. This was expected of him by the in-laws of his sisters. At the end, he has committed suicide as debt became too heavy and he saw no hope of recovery through farming on his land."

We spoke to the young RMP (local doctor), about health problems of the villagers. He said, "all people here are under great mental stress and tension. Most suffer from aches in knees and joints, and these are related to poor drinking water quality. People in the village are aging 20 years earlier than the normal aging time, which had existed earlier. Kids have started getting grey hair at the age of 7 years. Diarrhoea is rampant and people suffer from stomachaches all the time. There is no govt dispensary in the village. There are no vet services in the village; even cattle have deformed nails. The nearest vet and dispensary are at Varianwali, 6 km away.

#### **Suggestions by women of farmers' households and by farmers of Panjab:**

- Compensation demanded for the affected families, most of which are woman headed households with small land holdings, and debt to repay

- Appropriate treatment and medical facilities for the serious and other diseases, which have sprung
- Crop insurance as a measure to combat the menace of suicide.
- Intervention and counselling centers that harmonise between farmers and banks/moneylenders. Such centers are urgently needed by the women headed households of the farming communities,
- Reorganization of social structures at panchayat level to combat the menace of consumerism and dowry.
- MSP of other crops like sugarcane and cotton to help the farmers
- Drinking water to be supplied free of cost, as the debt ridden families are unable to pay the Rs 55/- per month for taps. Also the drinking water supply should be safe.
- The families of victims should be treated in the same way as victims of natural disasters such as earthquakes, cyclones and floods.

### **Public Hearing in Punjab**

A Jan Sunwayi to hear the impact of globalization on the Graameen Women of Punjab was held at Ludhiana on 17th March 2004 at Pindi Dayal Dharamshalla, Ludhiana, Punjab under the banner of the National Commission of Women, (NCW) National Alliance of Women for Food and Water Rights (NAWF) and Diverse Women for Diversity with Bharat Jan Gyan Vigyan Jatha and Punjab Stree Sabha. The aim of the jan sunwayi was to hear the voices of women in agriculture on the impact of globalization on women in agriculture, seed, food and water. It was envisaged that women having been traditional cultivators, processors and preservers would also come forth with solutions and alternatives to the problems. Apart from the graameen women from various regions of Punjab with academician, farmers, advocates, social activists, medical practitioners, health workers, veterinary doctors, intellectuals and government representatives attended the meeting.

Major Sher Singh Auluck (retd), a well known farmer, introduced the jury, which comprised of Dr Vandana Shiva, well known environmentalist and Director, Research Foundation for Science, Technology and Ecology (RFSTE), Ms Amarjeet Kaur, All India Trade Union Congress (AITUC), Dr Arun Mitra, General Secretary, Bharat Jan Gyan Vigyan Jatha, Ludhiana (BJGUJ), Dr Chanchal Gupta, Prof of Pharmacology, Dayanand Medical College, Mohinderdeep Grewal, a well known writer and retd Lecturer, Shri Daler Singh, Government Officer and a farmer well known for alternative farming practices, whose model of paddy cultivation provides a saving of 75% water, Manjit Kaur Sodhia, retd Principal, Government College for Women, and activist and Dr. S.N. Sewak, a renowned theatre personality.

Dr Arun Mitra, General Secretary BJGUJ, opened the session by reminding us that centuries ago, it was the women who were the first farmers, who had nurtured agriculture and had ensured healthy food for the family, since the men used to go out hunting. It was the women who had preserved the water bodies, forest, biodiversity and had ensured clean drinking water for all.

Dr Mitra dwelt on the policies of World Trade Organization (WTO). "The globalization under WTO is affecting the agriculture sector particularly women", said Dr Mitra. He added, "As and when Patent Act under WTO is implemented it will increase the cost of medicines beyond the common man. Now the traditional healing systems have got replaced by expensive medicines, which are getting costlier day by day. For example, a simple drug for stomach disorders, costs Rs. 2/- in India but costs Rs 30/- in Pakistan; similar scenario will emerge in India.

Dr Mitra added that farmers are suffering loss in agriculture due to policies being imposed on them, which are not farmer-friendly. Distribution System (PDS) which was a way to provide food at a controlled price have been closed down, causing great hardship to the poor as he now has to buy the basic food at higher costs. The common man is also being forced to even buy water to drink. He called on all the participants and the eminent members present to jointly study the problems and as well as evolve an action plan.

Ms. Amarjeet Kaur from AITUC reminded the audience of the important role that women had played in our country since the earlier times. Most herbs have been named after women. Most rivers have been named after women, i.e., Ganga, Jamuna, and Saraswati. Even search of water, and had been done by women. The relationship between women and soil, seed, water, biodiversity has been and is very deep. Therefore the theft of our seeds and biodiversity, which has been nurtured and preserved by the women, has had a deep impact on them.

Dr Vandana Shiva, Director (RFSTE), recalled that when she had visited Punjab in the early 80's, the term "Punjab Shining" was being used widely to acclaim the prosperity due to the Green Revolution. But she had seen, even at that time, that beneath the shine of Punjab were monocultures of water intensive crops, the chemicals that go along with, and ruin the fertile soil, So, after proclaiming that Punjab was shining, by spoiling the fertility of its soil and depletion of ground water, we are now proclaiming "India Shining".

Dr Shiva added that this term is being used at a time when Multi National Corporation (MNC) like Monsanto has been allowed to patent a variety of our wheat. RFSTE, through a writ petition filed before the Supreme Court of India, had filed a case against the patenting of a variety of our basmati and had been successful in making the US Patent and Trademark Office (USPTO) to revoke all but 3 of the 20 claims of patency for "Basmati rice lines and grains" which it had granted to an American MNC Rice Tec Inc. Also RFSTE along with other groups had demanded withdrawal of the patent on "neem" that had been granted to an MNC W.R. Grace by the European Patent Office.

Again, now, with Greenpeace and other organizations, RFSTE has challenged Monsanto in a court at Munich Germany for patenting our wheat.

"But the question is this, why should we, as citizens of India, have to challenge an MNC for stealing our wheat, when it is actually the duty of the government to do so and protect our wheat. But the government as if it is silently allowing MNCs to steal our wheat. Even the sacred river Ganga

and its waters is being sold to an MNC Suez. So perhaps we should coin new terms, i.e., "Coke Shining" and "Monsanto Shining", since these companies will make enormous profits on our food and water, which are our fundamental rights, and by stealing our biodiversity, which has been preserved by our women through centuries" she added.

Dr Shiva reminded the audience that Sikh Gurus had fought for welfare of the whole humanity of the country. Punjab has traditionally been the state that has borne the brunt of invasions and invasive policies, and has always provided protection to the rest of India. It was at Punjab that the first voice against rin (loan) was raised which then led to the formulation of the Land Alienation Act, 1900, which clearly stated that no one can take away a farmer's land, cattle and house and that they belonged to him and him alone.

The legendary hard work of Punjab's farmers became the reason for Punjab to take a pioneering role when India's Green Revolution started. Punjab's farmers worked hard, experimented with new seeds, and invested in fertilisers and pesticides. Punjab prospered and developed into the wheat bowl of India. But in the process, a new story began to unfold.

In districts like Bhatinda, the water table has collapsed, water bodies are poisoned with chemicals, the land has been degraded with excess pesticides, and yields are falling. Though Bhatinda was not the best place to farm initially, being rocky and barren, farmers worked hard and ploughed the rocky land, dump topsoil and infuse it with fertilisers. The barren land sprang to life and gave bountiful wheat crops. But some years ago, a large number of farmers in Bhatinda moved out of growing wheat and shift to cotton, as it was a cash crop with rich dividends. The first few years of the cotton crop were good till the American bollworm attack came. Crops got destroyed. Panic stricken, the farmers, through pesticide dealers, started pumping in huge amounts of pesticides. Initially the pests died but then the pests developed immunity fast. Says Lal Singh, a cotton farmer in Bhatinda, "Before 1990, we had no problems. We used to earn well and so eat well and lived well. But after the pests came, we saw hell. We had to spray throughout the year, and sometimes as many as 35 times. As the pesticide was very expensive, we had to take loans."

In villages where pesticide use is high, health concerns are rising. Water in Bhatinda district is no longer fit for drinking, due to toxicity of water. The water in Harkishanpura has been certified unfit for drinking by the government, but everyone continues to drink it, as there is no alternative. The water was found to have high concentrates of chloride. Excessive use of pesticides has destroyed the topsoil in many areas, and has crept into the water table, endangering the health of villagers.

Crops failed year after year and debts increased. Honor is a sacred word in Punjab. As moneylenders came knocking doors, the proud farmers of Punjab could not hide their shame and hundreds committed suicide. In village Harkishanpura, the village sarpanch passed a resolution and announced that the village of about 125 families and spread over 1170 acres was up for sale. The reason was that not a single house in this prosperous area was free of debt. Many have sold their land to be free of debt.

"It is a collapse of a dream, says" Sukhminder singh, a cotton farmer and member, village panchayat at Harkishanpura," "We will end up as agricultural labourers. Our children have moved out to nearby areas as casual labourers earning about Rs. 70 a day" she added.

Farmers and labor working on farms claim they are being affected by use of pesticides. Burning of eyes, skin rashes and itching, giddiness and fainting have been reported by labor after they have sprayed in fields. Many families use the gunny bags and the attractive plastic containers of pesticides to store foodstuffs, i.e., wheat flour, once the spray is over. Buckets used for mixing pesticides are used to store drinking water. Consumption of pesticide residues, through food and water, weaken the immune system and opens up the human body to various diseases.

Ms Usha Sharma, an advocate in Punjab and Haryana High Court also discussed the water pollution due to pesticide. Recently, there have been several deaths from village Jajjal, and neighbouring villages. A large number of people are suffering from cancer, kidney failure and ulcers. She demanded that compensation must be given to those who died due to pollution. Quoting villagers, she said that water has been proven to be the killer in the village, forcing the villagers to go to Talwandi Sabo, about 5 km from the village, to fetch clean water. Panchayat of Jajjal village has been writing to the government to conduct an inquiry and has put aside land for a water treatment plant along with 1 lakh of rupees, the government has taken no action and only turned a deaf ear to the pleas.

Taking suo motu notice of the news item in Hindustan Times, March 18, 2004 that polluted drinking water in Jajjal village of Bathinda district was causing serious "cancer-like" disease. The Punjab and Haryana High Court has issued notice to the state of Punjab through the secretary (Public Health Department), Secretary (Department of Rural Development and Panchayats), Bathinda Deputy Commissioner and Gram Panchayat of the village.

"We think that the constitutional safeguards provided in the Constitution prima facie stand breached by the State of Punjab and its functionaries in relation to the residents of Jajjal village and accordingly issue notice, remarked Hon' able High Court.

Smt Darshan Kaur, from Fatehgarh Sahib, said that in a few years, the water level in her village had gone down from 70 metres to 150 metres. This is causing great difficulty for the people.

Parveen Kaur from Amritsar talked about the problem of drinking water. In her village, handpump water is below 250 ft. Poor like her cannot afford the kind of money (Rs 6000/-) to buy a pump. She added, "Without water in the morning hours, women cannot send their children to school."

Smt Kamla spoke about the water problem. For a tanker, the contractor charges Rs 400, which the poor cannot pay. Sometimes in her area sewage gets mixed with the water supply. She blamed the government for the pathetic condition of the farmers and the poor. We are forced to sign on Rs 2500/ - while we are getting only Rs 1200/-.

Or Bawa Singh, from Voluntary Health Association of India (VHAI), Punjab Chapter, said that since the last 40 years, there has been a drastic change in the lifestyles of people in Punjab. The

government and MNCs selected special pockets in Punjab where labour was cheap in order to get more food grain, even though water in those areas was less. The companies also made profit from the farmers by selling them pesticides and fertilizers. Farmers were assured that they would have very good output and a very rosy picture was painted. Farmers were not able to calculate what their income would be. They built homes and bought goods, but they did not do this from their own bank balance, but from bank loan. Another point that is to be noted that even though the interest on a FOR with a bank is only 8%, the farmer had to pay 18% interest on loans taken from bank, and between 2440% on loans taken from private money lenders.

Today majority of the farmers are indebted and committing suicides". To reduce the farmers' suicides, the bank rate must be reduced to the rate of fixed deposit. Moneylenders should not be allowed to charge more than the bank rate. Government should have the facility to purchase the agricultural produce of the farmers, which it promotes among them. For instance, government promoted "keenu" in Punjab but there is no industry to purchase or consume "keenu" in the state.

Mr Nirpender Singh from Fazlika said, "In big canals, the government has laid polythene to stop the water seepage into the earth, which is lowering the water table in Punjab. As the water table is going down and down, women are forced to travel long distances to collect water. Earlier the water used to be sweet, but now it is bitter in taste. "It is our rainwater that the government is giving through the canal to another country (Pakistan), but the government does not hesitate to deprive the farmers of Punjab of the water by lining it the with polythene".

Mr Nirpender Singh talked about the minimum support price MSP for sugarcane. This was earlier fixed at Rs. 100/- per quintal, but the farmers are getting Rs. 70/per quintal. "The balance Rs. 30/- was the profit, the loss of which is badly affecting farmers." As a loss of this saving, the farmer like him was compelled to take loan. Even though he was willing to put the papers of his land in the custody of the bank for a very small amount of Rs. 3 lakh, yet he was refused the loan. Yet his brother, who has a cloth shop, was sanctioned Rs. 6 lakh.

Shri Manmohan Sharma, from VHAI (Punjab Chapter) said "Women suffered most from chemical farming as they worked on farms and so are the first ones to come in direct contact with chemicals. Causing it disorders of endocrine glands, cancer, asthma" skin diseases and infertility. Studies reveal that breast milk samples from Punjab contain pesticide. Even pesticide dealers, in spite of their immediate gains, regret that excess of pesticide has damaged the soil of Punjab.

Shri Manmohan Sharma also talked about the contract farming in Punjab. Sangrur has become the first district to introduce contract farming. According to Mr. Sharma, the contract has no legal binding for the company, exploits the farmers.

The farmers are unaware of what is written in the lengthy documents, and usually sign without being clearly told of the terms. The buy back cost of the produce by the company is never mentioned in the contract.

Ms. Rajinder Singh Brar, a woman farmer who belongs to Abohar, Fazilka, mentioned that no male acknowledges the existence of female farmer; she is doing agriculture better than men farmers. She has decided to change to organic farming. She said that women farmers have not received any training in water management, by extension workers. Organic wheat grown by her received a much lower price than the other wheat.

She explained how the contract farming is cheating the farmers due to absence of proper contracts between them and the companies that have been mandated to carry out contract farming in the state. A particular produce that fetched Rs. 8.50 per Kg in the market was paid only Rs. 3.5 per Kg. For the castor, the price is Rs. 1650 per Kg, but the company paid only Rs. 1000 per Kg. While the cost of production is fixed by the manufacturer, but in the case of agriculture, the farmers do not fix it.

She also talked about the water scarcity in her region. Moreover the water is alkaline. "Being a rich farmer, I can afford to pay the cost of 3 tankers per week, but poor farmers cannot afford it. These poor women are busy throughout the day on collecting water."

She also added "Government should start agro-processing," she demanded. She blamed the male dominated society for the problems of women engaged in agriculture. "Males have different attitude towards women engaged in agriculture. It is difficult for males to digest the success of female farmers." She gave the example of how the scientist in Punjab Agricultural University (PAU), Ludhiana, did not cooperate with her when she went to find out about the new varieties.

According to Dr Rajinder Pal Singh Auluck, agricultural scientist women are a part of every gathering in Punjab, but the men never tried to improve their condition. He said, " The growing alternative crop replacing wheat or paddy is not the solution. Paddy and wheat are not the culprits, but the technique being used is the culprit." "A feedback shows that the contract farming is very harmful to the farmer. When we give the negative feedback about the Bt cotton in Punjab, the Indian representatives of Monsanto appear to be more worried and anxious than the foreign employee of the company."

Dr. Singh stressed that women should take active part in decision-making. He gave the example that when the wife is the sarpanch, it is only her husband who takes all the decision. Women sarpanch should become more active and take the decision for her.

Ms Gurbax Kaur, head teacher of a school in Jalandhar said, "Women should not use fruit produced by chemicals". She also requested the audience not to use the "tullu pump", as it blocks water and deprives others.

Shri Darshan Singh Macchiwala discussed about the integrated and holistic approach in farming adopted by him on his farm. Though he has passed only 7th standard, but he has achieved remarkable success in making the best use of recycling techniques. Besides cultivation, he has a piggery, a poultry

farm and fishing ponds; the wastes of one are being recycled as manure for the other. His technique of organic farming has been widely acclaimed and he has helped others to replicate his model. The successful alternative model, as has been developed by Shri Darshan Singh Macchiwala has been acknowledged in Punjab as a "Best Practice in Agriculture".

Dr Chanchal Gupta, Professor of Pharmacology at Deen Dayal Medical College had observed a steep rise in diseases which are very likely linked to intake of unsafe foods which contain residues of chemicals. She also said that plastics should not be used as it blocks the flow of water in pipes, drains, and canals, and since plastics are non-biodegradable, they affect the productivity of the soil.

Shri Avtar Singh said, Agricultural scientists have encouraged farmers to use pesticides; whom is causing water pollution.

Smt Sukhwinder Kaur Saini from District Ropar said, "She and her neighbour farmers were sold "outside seeds" and promised higher and better quality produce. However, the produce was of low quality and could not be marketed. It was a trick by agents to sell seeds to innocent farmers without any guarantee of quality, so that farmers are forced to buy seeds for the next crop. Women should make it a point to save their own seed as they had been doing for years.

Dr S.N. Sewak, who was a jury member, said, "we are shining only in corruption. We should follow some policies to avoid desertification of Punjab. Women are not coming forward to take the lead. When a woman becomes sarpanch, only the husband takes decisions. He said that the government was ready to give Rs 1.5 lakh grant for open air theatre, but the woman sarpanch could not even decide whether she could take the grant or not, and depended on her husband even for such a simple decision.

According to 'the Alma Ata declaration', health care was to be provided to all by the year 2000. National Health Policy had guaranteed that by the year 2000, health would be a fundamental right, which may not be possible. Studies to become a doctor have become very high; it costs upto Rs 50 lakhs for medical studies, including post graduation, in some private colleges. Yet private medical colleges are being promoted, and the government medical colleges are getting neglected and closing down" said Mr. Arun Mitra.

Dr Vandana Shiva closed the session by reminding the farmers, that the new international policy has very little space for the farmers, and no place at all for the small farmers. In fact, In USA the government says that only 2% of population need be farmers. The question then is, where will rest of the farmers go? There is a big plan to finish off our small farmers and allow only a few big farmers to exist, which will be controlled by MNCs. In fact, an "Exit Clause of Farmers" is written in the text of WTG. But in India, small farmers have been and are the very basis of our agriculture. The government should form policies that protect and encourage the farmers.

## 2.4 BUNDELKHAND

Occupying almost 70,000 square kilometers of the central plains in India, the Bundelkhand stretches over twelve districts of northern Madhya Pradesh (MP) and five districts of Southern Uttar Pradesh (UP).

Located between the generally hot and humid dry continental climate of the west (Rajasthan), the Bundelkhand generally experiences a semi-arid climate, though this is highly variable depending on the time of year. Indeed, the area is known for experiencing droughts in summer and disastrous floods during the monsoon.

On average, the region receives anywhere from 75 cm to 125 cm of rain each year. The dry plains in the north usually receive less while the southeast benefits from more water. Daily temperatures also fluctuate depending on the time of the year. Peak summer (May-June) brings excessively high temperatures, often topping 40°C as the hot, dry loo winds sweep in from the desert. During the winter months (December - February) daytime temperatures are quite pleasant reaching highs between 16.5°C and 21°C. Nighttime brings much cooler temperatures and frost has been known to occur on the coldest evenings.

"The Bundelkhand is drained by the Yamuna River system, itself one of the principal tributaries of the Ganges. Due to this, drainage occurs principally from north to south, with some local variation depending on topography. The main tributaries of the Yamuna are the Betwa, Ken, Baghain, Pahuj and Dhasan Rivers, most of which are important sources of irrigation water. However, even more important than rivers are the numerous small streams and nallahs that feed the larger rivers.

Both man-made and natural water bodies dot the countryside of Bundelkhand. These vary from lakes and reservoirs to tanks and other water harvesting structures, and play an important role in assuring water security in the region. The most well known are: Pahuj reservoir, Barwar sagar, Barwar lake, Siari lake, Pachawara lake, Dakwan and Parichha reservoirs, Arthar tal, Manikput tal, Majhgawan tal, Bela tal and Rajpura sagar among others.

Grasses are predominant in the rocky plains and hills, particularly after the monsoon, although scrub and brush species are also common where more water is available for their growth. Siari, katai, gunj, bel and ghout trees provide some shelter in the normally open "wastelands" which characterize the Bundelkhand region. These grasses and shrub species are important as fodder for cattle and have economic value.

Black soils, which are found mostly in the south of the region, are more water retentive and are therefore preferred for wheat, gram and sugarcane cultivation. Covering only a small percentage of the Bundelkhand, riverine soils are primarily formed by sand and clays. These soils are generally not used for agriculture and are therefore not considered as an important soil in the region.

The impact of human activity on the region has until now been unsustainable. Even now, the Bundelkhand is seen as a region suffering from acute ecological degradation, logging and mining activities over the past several centuries have denuded the landscape and facilitated the erosion of the fragile soils. Additional population and livestock pressures, which are already high, have only served to aggravate the problem. Expanding ravine lands, especially in the northern area, are already threatening local farmland and can have serious consequences on the socio-economic situation.

Access to abundant water resources has always been one of the major environmental concerns in the region. Irregular rainfall has often led to either drought or flood conditions with consequent effects on the natural and human environment. Increasing dependence on groundwater resources has led to a lowering of the groundwater table in places where withdrawals have exceeded recharge. The decline in groundwater levels has further undermined water security in the region and accelerated desertification and erosion. In recent years water quality has also emerged as a principal environmental concern. Erosion from marginal lands and agricultural fields has increased the sediment load in the rivers and has already shortened the lifespan of many checkdams and water harvesting structures. The growing use of pesticides and chemical fertilizers, which until now has remained quite low, will also affect water quality in the future.

The people of the Bundelkhand have remained both politically and economically separated from the rest of India. As such the area has one of the lowest levels of economic and human development in the country. Indeed, the remoteness of the region has prevented the development of basic infrastructure such as roads, electricity, water and sanitation services, and telephone lines. The lack of these services has only perpetuated the poverty cycle in the region.

According to current estimates, the human population of the Bundelkhand region is approximately 21 million. The present population is four times greater than in 1961, which indicates that the population growth rate has remained 'high since the green revolution improved cropping practices and ensured greater food security. In fact, historical data on population growth in the region shows that population size over the past century has fluctuated widely due to the 'climate (floods and drought), immigration from Pakistan and urban migration, and epidemics of cholera and influenza.

Bundelkhand is an agriculture-intensive region and therefore the majority of the populations are rural and dispersed over the area. Nonetheless, increasing population pressures will force a greater number to settle on marginal lands, which have previously remained abandoned. In addition, more and more rural inhabitants are leaving their villages and migrating to the larger urban centers such as Jhansi, Hamirpur and Banda. Recent rural migration data indicates a rate as high as 39% per year,

## Public Hearing held in Bundelkhand



which is over three and a half times the national average of 11 %. Male rural out-migration is quite common but nonetheless disruptive to the family social unit.

The majority work as farmers or agricultural labourers, occasionally supplementing their incomes during the non-planting season working as day labourers or in small cottage industries. The regional economy is almost exclusively based on agriculture, owing to the predominantly rural population and lack of exploitable natural resources. Industry is mostly absent, save in the larger towns and cities such as Jhansi. Statistics show that the ratio of working factories to 100,000 people is 1.6 in the Bundelkhand versus 6.3 in the rest of Central India. Most of the non-agricultural economy is based on small commercial ventures or the provision of basic services.

Agriculture plays an important role in the Bundelkhand economy. However, even this sector has not been exploited to its full potential due to several factors. Poor soils and uncertain rainfall have made agriculture difficult in many areas. Crop productivity is among the lowest in the country, and even the value of agricultural production per hectare in the region is 1.4 times less than for Central India. Frequent droughts and floods have destroyed crops and undermined social security as well, and few farmers irrigate their lands. Perpetuating the cycle has been the poverty that has prevented many farmers from switching to more efficient farming methods. As such, most of the agriculture is subsistence and contributes little to the overall economy in the region.

Nonetheless, the principle crops in the Bundelkhand are cereals such as wheat, rice, and barley. Cereals occupy the majority of the cropped area and are sown primarily during the rabi (winter/dry) season. In addition, pulses, grams and oil seeds are also important crops. Fruits, vegetables, and fibres are only secondary in importance and are localised to specific geographic areas. Mixed cropping is still practised by farmers as a precautionary measure against crop failure but the method is encountered less and less, particularly where there is access to irrigation.

The majority of the irrigated land receives water from later construction works such as the canals built during the British Raj or the post-Independence Matatila, Lalitpur, and Sarpar dams. These structures have done much to increase the irrigation potential of the region, but still only benefit a third of the cultivable area. While the use of irrigation has improved the lot of many farmers in the region, the widespread use of groundwater has severely affected the sustainability of this activity. In a region that often suffers from weak monsoons and drought, recharge of the groundwater table is limited. Over extraction has already led to a decrease in the water table and if continued, will pose a serious threat to water security in the region.

### **Public Hearing in Bundelkhand**

The Jan Sunwayi was organised by RFSTE, Manviya Shiksha Sanstha, an organisation working for farmers' rights in Bundelkhand, and National Commission for Women. Both women and men of the region Bundelkhand gathered in large numbers at Sri Vatika Garden at village Barokharkhurd. People came from different areas viz. Chhattrempur District, Mahoba, Lalitpur, Srinagar, Milathu gaon. About

## **Victims of Rape at Bundelkhand Jan Sunwaiye**



750 participants attended the Jan Sunwayi. Prominent among the women who spoke were Smt Shobana Srivastava, a prominent woman farmer, Smt Udheria Devi, Pradhan, Karbi Zila Panchayat, Smt Ram Dulari, Chairperson, Mahoba Zila Panchayat, Smt Sonia, Pradhan, Khaptia village, Banda distt and Smt Ram Devi, Member, Panchayat Chandwara Gaon, Banda distt (UP)

The jury consisted of Shri Radha Ram "Bundela", the famous historian of the region, Dr lakshmi Tripathi, Professor, Mahila Maha Vidyalaya, Smt saraswati, Director, Mahila Jagrati Manch, Karbi, Sudha Chauhan, ex Chairperson, Banda Nagar Palika, Dr Bhartendu and Smt Shobana Shrivastava, well known farmers of the region, Rakesh Aggarwal, correspondent E-TV, Shri Chanda Mohan Sahu, a well known farmer, and Vandana Shiva, Director, RFSTE, Maya Jani, Director, Navdanya, and Hiti Mahindroo, from Diverse Women for Diversity

Lack of water has made it difficult for women. The women complained of lack of water in their households. For example Kunna Devi, from Barokher village said, "There was no water in taps". Sheila Devi, from Bidhipur gaon, talked about the poor sanitation system in her village during rains, the sanitation water flowed into the houses. Shashi Singh from Zila Mahila Manch, Banda said, water supply is only for 15 min to 30 min in a day. Since there is no electricity, so generators do not work. She said that the Ken- Betwa river link, which is being planned by the government to take the water from Ken away, will trouble the region even further, since the region is already water scarce.

Smt laxmi Tripathi said "In Bundelkhand, women have no work except to collect drinking water on their heads from long distance. The grim situation of water may best be illustrated by saying in Bundelkhand, which is roughly translated, as 'let the husband die but the earthen pot of water should not break. Instead of solving the water problem, the attempts of the government to link Ken to Betwa is a disastrous mistake. Banda is entirely dependant on Ken river. If Ken is linked to Betwa, it will not only affect Banda but would also jeopardise the survival of farmers who depend on the Ken".

The participants were extremely apprehensive of the drought like conditions that would prevail in the aftermath of the Ken-Betwa river link and the desertification of the region as a consequence. "The farmers of the Ken region would be directly affected, with drying up of wells and lowering of the water table." Said Ms Laxmi Tripathi, She added "About 400 villages in Banda district will also be affected, because there will be no water in the river during summer."

Said Smt Suman, "Water is the biggest problem in almost every district of Bundelkhand, whether it is Banda or Lalitpur. Despite the large number of dams in Bundelkhand, the queue for water before a tap or a hand pump is a common sight during summer. Bundelkhand has sufficient rainfall, but people have forgotten the conventional system of water conservation, causing a water crisis. For instance, the old tanks in the Tikamgarh district are still operational and provide water to the people."

According to Smt Suman, the scenario is worst in Patha in Chitrakoot district where women have to travel a long distance to collect water for drinking. Half of women's time is spent to travel long distances to collect water, which affects their health and well-being of their children, and aggravates

domestic problems." It has to be noted that the Patha Drinking Water Scheme was completed in 1973, which has however failed to solve the problem, because 30% to 60% water does not reach the people. In a village near Patha, there is only one hand pump, which is in use. In village Sakroha, only 3 out of 13 hand pumps are in use, causing great distress to people.

Even today, in Bundelkhand, women play an equal role in agriculture. Agriculture is not considered a commercial activity here. The women want to do farming of traditional crops, like their traditional wheat, rice and pulses. But they are unable to find a market of their fine rice varieties, and the policy of the state does not allow rices of the region, like Kanda and Katka, to go to other states, which is not a favourable policy for women. The rice variety 'mushkin' of the region is one of the finest varieties, yet state does not allow the variety to be exported to other states. As the market for this rice is not enough within the region, so this variety is in danger of getting lost. These traditional fine rice varieties are not bought by the state, and neither are they allowed to sell them in other states. These way farmers would tend to stop growing the traditional varieties, which would then get lost. They discussed difficulties with other traditional crops also.

Smt Shashi Singh said that today agriculture in Bundelkhand is facing a crisis, as the government is promoting genetically modified (GM) crops, which have increased by about 40% during 1996-2001. GM crops need more water and more fertilisers, which may affect food, soil and water. As some soils in Bundelkhand have micronutrient deficiency, she was worried about the adverse affects of use of chemicals and GM crops in the region.

Shri Ramdeo Namdeo said that the areas consisting of black soil, away from the lakes have less water. These having natural "kheti". Bundelkhand was famous for its pulses, like moong, urad, kondo, Sarna and chana. However, these pulses varieties are slowly finishing, as the seeds of these varieties are not available. Now, the new wheat varieties are beginning to replace the traditional bio-diverse crops.

The region between Jhansi and Tikamgarh, which includes Barua Sagar and Prithvipur, is a region well known for its fresh vegetables, especially haldi, ginger, arbi and lauki, among others. Women are the main farmers in this region. Women partake in all farming related activities, including carrying vegetables to market, and selling the produce. Women said these vegetables should be protected". They also said, as the region should be protected from outside influences, such as chemical farming, which would spoil the bio-diverse nature of farming in the region".

The farmers are against chemical farming. They described how the soils of those farmers who had used chemical fertilizers and pesticides, have become dependent on chemicals, and how the soil now needs increasing amount of chemicals, which is proving to be very expensive for them. Most of them have got into debt. Others complained that the farmers, who do very hard toil, are left with no profit, whereas the traders who buy from them are making 100 fold profit. They demanded that policies should be made farmer friendly, from the very first step of receiving reliable healthy seed, bank

loans at a low rate of interest. More and more farmers are turning towards organic farming. During the Jan Sunwayi, farmers shared with each other their experiences in chemical and organic farming.

A large number of women complained of ill treatment in their homes, which is a consequence of decline in farmers' incomes. Violence against women is growing at an alarming rate'. A large number of liquor vends have been allowed to be opened. Men are turning to liquor, which adds to women's problems in a low-income household. We received a large number of written applications from women, who are being harassed for dowry and ill treatment. They also suffer from malnutrition. The women wanted the letters to be presented to NCW, as they are unable to come to Delhi themselves.

The women do not know where to turn for help. They are unable to file FIRs at police stations. There are no women police officers at police stations. The women demanded that a woman constable/officer be posted at the police stations in the region. Dowry cases and dowry-associated violence have increased resulting dowry deaths and dowry suicide. Women present were very surprised when they were told that at Delhi there existed Women's Cells at Police Stations. Most of the girls who came to the meeting were victims of dowry related violence. Apart from filing FIRs at police stations, the old fathers who had accompanied the girls to the meeting said that they are having difficulty of bearing the burden of educating the grand children. The husbands' families often remarry their sons. It is not within the scope of the girls' families to prove the second marriage, in order to file for divorce. Legal action is not possible in most of the cases, due to lack of funds, and lack of proper guidance.

With legal aid or without it, violence on women continues. We are enclosing data on violence against women from Banda and Bundelkhand. According to a survey carried out by Manav Shiksha Sansthan, an NGO at Banda, whose members were present at the meeting, the reported dowry death cases in Banda alone have shown a marked rise, as shown below:

| <b>Year</b>  | <b>Dowry deaths</b> | <b>Rapes</b> | <b>Molestation</b> |
|--------------|---------------------|--------------|--------------------|
| 1996-97      | 2                   | 0            | 0                  |
| 1997 -98     | 8                   | 0            | 6                  |
| 1998-99      | 5                   | 2            | 23                 |
| 2000-01      | 19                  | 16           | 14                 |
| 2001-02      | 17                  | 14           | 6                  |
| 2002-03      | 19                  | 14           | 11                 |
| <b>Total</b> | <b>80</b>           | <b>46</b>    | <b>60</b>          |

In Bundelkhand, the reported cases (from a newspaper item) are as follows:

| <b>Year</b> | <b>Dowry deaths</b> | <b>Rapes</b> | <b>Molestation</b> |
|-------------|---------------------|--------------|--------------------|
| 2000        | 109                 | 87           | 33                 |
| 2002        | 80                  | 86           | 18                 |

Maiki, from Bhodiprva village, Bhuragarh, said that she had no employment and had 4 daughters to feed. She wished she had some land for agriculture, and requested the government to provide her with some work. The women complained that they were encouraged to participate in sterilization schemes in return of a grant of land. For example, Shanti and Maiki's husbands, from Godipur village near Ken, were promised right to some land if they underwent sterilization. But after sterilization, they were not given any land.

Women farmers are unable to get loans from banks, as they fail to provide any security to the bank.

Smt. Gulshan Mahoura said that on death of her husband, villagers had helped her to repay part of the loan; her husband had taken from the bank. She requested waiver of interest on loan amount taken from the bank.

Landless women also discussed their problems. They complained that they had no property rights, and demanded that their right to property be recognized. Widows also demanded right to property. Widows complained that even though they were entitled to widow pension, yet they were not receiving it, whereas those who were not entitled to widow pension were able to manipulate, by giving bribes, and were taking pension.

Women of the region have traditionally been agro-processors. Shri Ramdeo Namdeo said that agro-processing units in the region have all closed down. Earlier, women used to prepare gur, achar, van papad, soaps, herbal concoctor for common ailments rassi (rope) and baskets from kaans grass and baans (bamboo). But now as the market is flooded with plastic rope and plastic baskets, women have stopped making rope and baskets from the traditional grasses and bamboo, as they do not find market for them. They do not find market for soap and herbal concoctor ether and paper either, so they have stopped these activities also. On the whole, women have lost their incomes and livelihoods in the agro-processing sector. But they want the revival of the agro-processing sector in the region, as well as market for their produce.

Dr. Sahib Singh Shukla from Atara said in his region, OAP and urea was distributed free of cost, which is overtaking traditional farming, but farmers should strive to save the soil by using 'gobar khad'. Sugarcane mills are closed. Dr Shukla said he would like to set up a kacchi dhani, which could cater to 6-10 households. If other people also set up such dhanis, villagers could generate income for themselves.

Smt Shobana Shrivastava, a successful woman farmer, encouraged women to carry on with their work. She narrated some success stories of her village where women graze cattle and sell milk. She said, "help yourselves, and do not cry."

Common land belonging to villages, used for pastures for the cattle, has been given away as "patta" to various people, so the villagers have nowhere to graze their cattle. Recovery of commons is a dire need in the region so that women can again go back to rearing of livestock. Shri Ramdeo

Namdeo said that loss of commons and pastureland has resulted that no cattle to be kept at homes. Therefore, households do not have milk, and children are being deprived of a valuable food. It is not profitable any more to keep cattle. Veterinary care for the cattle, in case needed, is not available. Till a few years ago, it was possible to see about 500 cattle in each village, but now one can see only about 10 cattle.

Shri Ramdeo Namdeo from Niwari, of Tikamgarh narrated: There are 1200 lakes and ponds in Tikamgarh district, and most have been built by rajas as 'manta' (as promised for fulfillment of wish) for benefit of people. They have been built by locals using conventional techniques, and functioned till today. They do not need much maintenance. There are thousands of "baories" in Bundelkhand. Earlier they were looked after by communities but today most of them have gone into private hands. In areas, which are not in private ownership, panchayats look after the maintenance of the "baories". It is important to educate the panchayats particularly women about the need to maintain the "baories".

In many lakes, such as Bisagarh, Nandanwara Lake, Sindur Sagar, Gwalsagar and others, women farmers have been growing kesru, surka, kama I dandi, and mumr in the lakes in the summer months, and singham in winter months. Till recently the lakes provided livelihood to women fishers. Fish from these lakes is today even being sent to West Bengal.

But now, fishing rights are given to big contractors. Women from communities that depended on fishing as a livelihood are without work. Avdesh related how fishermen of the region had lost their livelihoods due to government policy of giving fishing contracts to big contractors. Her fisherman husband has now to do rickshaw pulling to earn a livelihood. Kamal, from Bharti Samaj Sangh, said that for all the years, villagers had harmoniously fished in lakes, by rotation of days. The lakes were a common resource for the benefit of the community. The rainwater fed the lakes, and the villagers looked after the lakes for the benefit of all. But now the government auctions fishing rights to outsiders.

Pinky Sahu, a handicapped girl who works with an NGO Viklant Kalyan Santh and makes envelopes, special spice mixtures for a living, also demanded reservation of scholarships in educational institutions for handicapped persons.

Alcohol related violence on women is on the rise. Shashi Singh, Vice President of Zila Mahila Manch, banda, demanded that liquor vends be closed, which has caused havoc in all households. "Women get beaten up by drunken husbands and cannot complain. Now women are being forced to raise their voice against alcoholism, and have become united to fight this issue" she added.

Medina from Bodhipur said, "It is the government that is responsible for getting us beaten by giving licenses to sell liquor". Prabha Gupta, from Mangal Jyoti Sanstha, Banda said, "50% of loans disbursed were for liquor booths. In Alia gaon land is being sold off as a result of debt into which men have fallen due to alcoholism. There is no food in the homes of Alia village". All the women demanded that all liquor shops be closed. The women also said that since credit cards had been introduced in

the area, their lives had become very hard. The combination of easily available liquor and credit cards had aggravated the problem.

Shri Avdesh said in fact, only smallholdings exist in Bundelkhand, and these are of no use. 31 departments that had to be transferred to the Panchayats have not been done so. Once this is done, local governance will become stronger, and will benefit the local communities." He is very worried as to the consequence if the Ken-Betwa river linking. He said, the river link will cause Ken to dry up, and then what will happen to the women? The women shouted in unison, we will go dry, but Hamirpur zila will flow away with floodwaters.

Dr Bhartendu, a successful farmer of the region, said, "In Banda, we are lucky that wheat is still being grown without chemical fertilisers, and is being sold at a high cost at Delhi. Let NGOs empower women farmers to become successful at agroprocessing at home." Dr. Bhartendu was equally worried about the consequences of the Ken Betwa river link. "We would not allow Ken to be turned away from us. All of us should sit together and make a 'yojna' and form a 'sangathan' to protect our agriculture for our families".

At the end of of Jansunwai Shri Kamal from Barokherkhurd Block summarize the hearing.

1. Save the people from 'rin' (loans). The bank interest on loans for farmers is too high and creates misery for the farmers. In case of death of a farmer who has taken loan, the widow be exempted from repayment of loan taken by the late husband.
2. Ken Betwa river link should not be allowed to make, as it will rob farmers of their livelihoods, as well as create water scarcity in the region.
3. The traditional lakes, tanks and ponds in Bundelkhand, which are still functioning, should be maintained properly, by the community and by the government, as these are a source of water, food and livelihoods to a large number of people. Since these lakes, tanks and ponds are rainfed, best practices should be replicated in water scarce areas, if possible.
4. There should be a separate law for women in the farming sector.
5. Chemical farming should not be encouraged. Traditional farming and traditional crops of the area should be protected as well as promoted.
6. Agro-processing in the region should be revived, as it is a good source of income for women. Market should be made for agro-products of the region.
7. Traders are grabbing common pasturelands, this should' be stopped. Panchayats should try and recover common pasturelands. Attempts should be made to "green" the region once again.
8. Fishing rights should be restored to locals and not auctioned to contractors.
9. Access to food is fundamental right; so all people should' get food.

10. All liquor vends should be closed down. Credit cards should not be distributed. The introduction of credit cards and opening of liquor vends is a lethal combination.
11. Violence against women is growing at an alarming rate. Even though there have been dowry related deaths, there are no women police officers, and legal aid cells in the region. Women have great difficulty to register FIRs, as police personnel are uncooperative. More women's cells should be opened at police stations, that women police officers be present at all times, and that legal aid cells be opened, as well as be operational, in the region.

### 3.1 RECOMMENDATIONS

On the basis of the research study undertaken on the impact of WTO on Women in Agriculture, *Diverse Women for Diversity* has the following recommendations for the National Commission on Women and the Government of India.

Towards a women centred agriculture policy:

- a) Trade and technology policies must protect the livelihoods of women in agriculture. The Agreement on Agriculture of the WTO (AOA) must be reviewed with a gender perspective.
- b) Since it is women's collective knowledge and expertise embodied in seeds and biodiversity, there should be no patents or IPR monopolies on seed. The TRIPS Agreement of WTO must be reviewed from a gender perspective.
- c) Women's work in agro processing is both an important source of livelihoods and important source of safe and culturally diverse foods. Food safety laws designed to destroy household and community based agro processing need to be changed. The sanitary and Phyto sanitary Agreement of WTO (50S) must be reviewed with women's livelihoods and expertise of agro processing in focus.
- d) Agriculture and trade policy needs to be guided by the objectives of sustainability, livelihood and income security, and food security. These objectives also serve the interests of women.
- e) Organic farming needs to be promoted to increase women's productive roles in agriculture, decrease health hazards from toxic chemicals and avoid the drain of scarce family incomes to pay for unnecessary chemicals.
- f) Livelihood and income security creates the imperative to protect agriculture from dumping of artificially cheap subsidized products. These needs reintroduction of QRs (Quantitative Restrictions). The right to countries to protect special products, and introduce special safeguard measures must be used to protect the livelihoods and incomes of women in agriculture.
- g) For a women centred food security model we proposed the following:

A truly woman centred decentralized democratic model of food procurement and distribution for food security has to ensure:

- Food security at the household level;

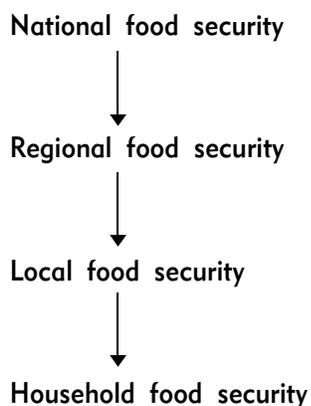
- Food security at the local level;
- Food security at the regional level;
- Food security at the national level;

The present food crisis is reflected in bursting godowns and starving people - a reflection of total food insecurity at the household, local and regional levels.

A truly decentralized democratic model will put the foundation of national food security - household food security - in women's hand.

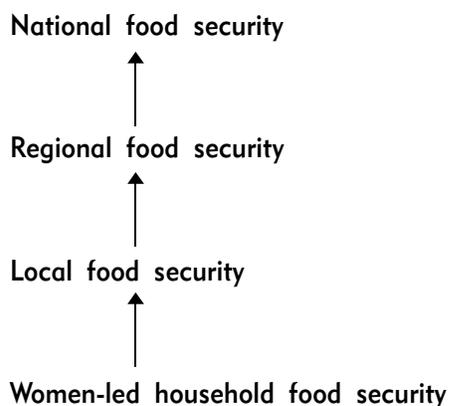
### **State-Centered Model**

Which operates on the trickle- down theory that stocks in the FCI godowns Will actually meet the food needs of the women, children, dalits, landless and the most excluded people in the country.



### **People-Centered Model**

National food security is built on the basis of a genuine people's food security even in remotest? corners of the country.

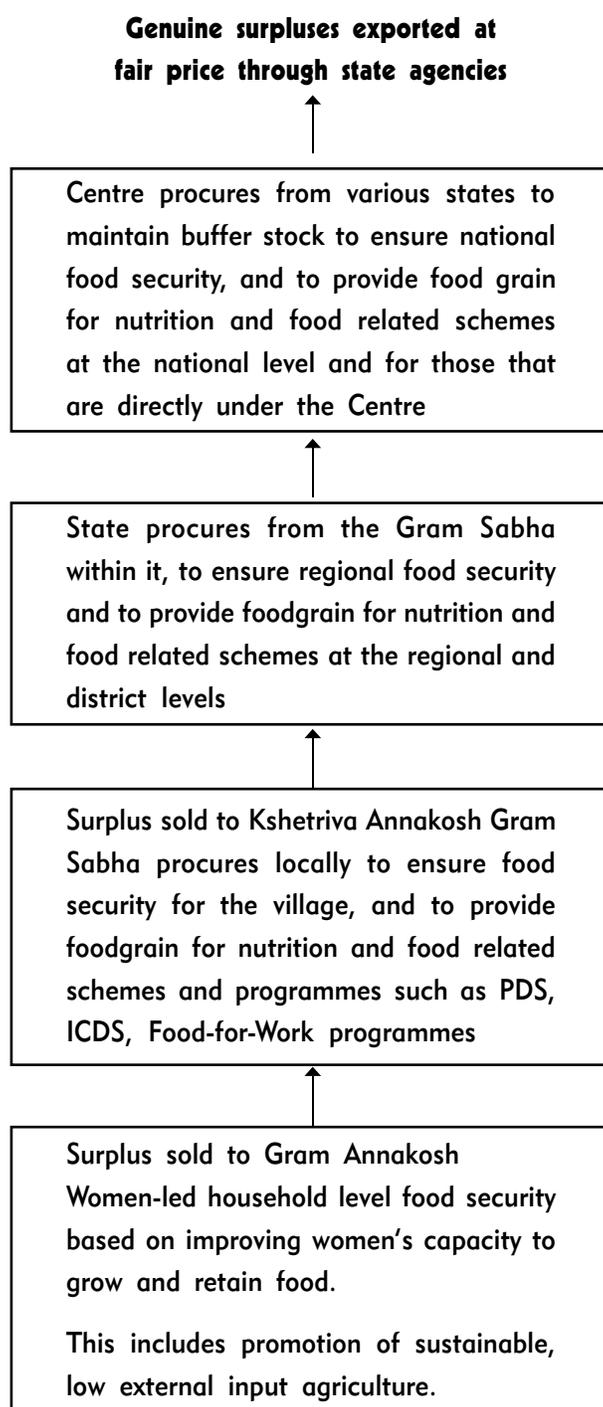


### **Elements of Women-Centered Household food security**

- High nutrition-per acre to increase nutritional security
- Internal input agricultural practice to reduce debt and expenditure on purchased inputs.
- Increased use of drought resistance varieties and crops to reduce ecological vulnerability. Organic methods to improve soil moisture, conservation and reduce water demand.
- Diversity of crops to ensure balanced nutrition throughout the year.
- Use of farmer saved open pollinated varieties to reduce costs and improve adoption. Elements of gram-sabha centred local level food security.
- Food security should be a central element of genuine decentralization of the food system. For gram sabhas to be empowered to function as providers of food security, they need to

- Establish community grain banks - Gram Annakosh
- Receive grants to procure locally so that local producer's livelihoods are protected and hence their food entitlement is protected.
- Local procurement reduces storage and transport costs.
- Local procurement provides culturally appropriate foods
- Use locally procured grain for all public food- related programmes and schemes like ICDS, Food for Work Schemes, Anna Anthodia, Jawaharlal Rodger Yojana and other development programmes, school mid-day meals, as well as in all other public sector institutions such as primary health centers, district health centers, canteens, railways etc.
- In case surpluses exist after meeting local needs, village grain bank should sell to grain banks of state and centre
- In case of scarcity and emergency, village grain banks receive from state and central grain banks.
- Gram sabha has the right to develop a taxation system to raise complementary financial resources for procurement and running the Gram Annakosh.

## Elements of Women and Food Security-centered Food Procurement and Distribution System.



Mahila Annakosh

### **State level Food Security System - Kshetriya Annakosh**

- States are empowered to procure regionally with the centre providing adequate financial resources during the transition period.
- State policies include ability to raise complementary financial resources through taxation
- State government's procurer surpluses from Gram Sabhas.
- Kshetriya Annakosh provides food to Gram Sabhas in period of regional food scarcity and emergency.
- Kshetriya Annakosh will provide food to all public institutions and schemes related to food such as ICDS, PDS, Food-for-work schemes, state run hospitals, health centers and clinics, state institution canteens including canteens of legislative assemblies; railways etc.
- State agricultural policies should be redirected from non-sustainable water-, and capital-intensive food production systems to sustainable, water prudent, low input systems of food production.

### **National level Food Security System - Rashtriya Annakosh**

- ❖ Maintain the FCI as the central institution of procurement during the transition to multilevel food procurement system to ensure genuine decentralization and effective food security at household, local, regional and national levels.
- ❖ Maintain the PDS system merging the BPL with the APL so that all people's access to food is protected.
- ❖ Develop, over 5 years, a multi-layered PDS system with responsibilities at each level matches with rights and capacities at that level.
- ❖ Centre continues to fix a uniform minimum support price for food grains and ensures its implementation, both for public and private procurement, so that internal dumping of food grain does not occur, and farmers get a fair price.
- ❖ Revision of New Agricultural Policy to make it farmer-centered and food security centered rather than corporation-centered by removing.
  - a) Contract farming
  - b) Incentives such as tax holidays, tax concessions, low lending rate etc to corporations for taking over food system
  - c) Ban futures trading in food grains
- ❖ Policy should give priority to local production, local procurement and local processing.
- ❖ Removal of Farm-to Port clauses in EXIM policy and Zero excise duty for industrial agro processing.

- ❖ Exports to be routed through state agencies after ensuring the existence of genuine surpluses after ensuring domestic food security at the levels of the household; the village, the region and the nation have been met.
- ❖ Imports only to be in periods of genuine scarcity.
- ❖ Remove restrictions on transport of food within the country by farmers rather than traders.
- ❖ New taxes on luxury consumption, corporations, increase in tariffs on agricultural imports and exports to finance national food security system including financial resources to be transferred to state and Gram Sabhas.
- ❖ Maintain national buffer stocks.
- ❖ Bring back quantitative restriction on imports and exports of agricultural commodities and food by using Art. 20 and 21 of the WTO Agreement on Agriculture.
- ❖ Negotiate for change in WTO's Agreement on Agriculture to ensure that livelihood and food security boxes empower India to be exempted from trade liberalization rules of WTO in areas of food and agriculture.
- ❖ Fix minimum retail price for essential commodities.
- ❖ Ensure labeling for food safety, including freedom from genetic engineering.

### **WTO Reforms for a Genuinely Decentralized Food System**

The present rule of the WTO including its various treaties such as the AoA, TRIPS and GATS undermine the Constitution of the country by threatening the fundamental right to food, the Panchayati Raj Amendment and the federal structure of the Constitution.

The re-negotiated terms part of the citizen's call for WTO : SINK TO SHRINK

The re-negotiation should include as part of creating a genuinely decentralized agenda for food security system.

- Agreement on Agriculture - The negotiations must reject the clauses on Market Access, removal of Quantitative Restrictions on imports and exports and removal of subsidies to farmers and food subsidies for consumers. Quantitative restrictions must be re-imposed on food and agricultural items.
- Trade Related Intellectual Property Rights (TRIPs) - Food security is not possible without farmers right to safe seed. Monopoly IPRs on seeds, plants and other life forms threaten farmers right to safe seed and thus endanger food security.
- Sanitary and Phytosanitary Agreement - The current dominant interpretation of the Agreement allows the shutting up on safe foods on SPS grounds - such as banning freshly pressed low-cost, healthy mustard oil, while allowing the introduction of hazardous foods - such as genetically

engineered food products, meat products that increase health hazards and public health problems. Each nation needs to develop its own national system that meets its national needs of safety rather than being limited/directed by the present interpretation of the SPS.

- General Agreement on Trade in Service (GATS) covers food distribution and water by ringing both sectors under services. Thus it allows corporate takeover of essential commodities and vital resources, without which it is not possible to survive. Food and Water cannot be brought under GATS.

### **Recommendations from Jan Sunwais**

It is strongly recommended that for social economic and political empowerment of rural women in India the development managers must design their development programmers and activities by considering not only men as farmers' and women as farmers' wives but as equal partners in development process.

Policies should spell out specific legislation and programmes of action to entitle women to productive assets, access to inputs (land, credit, water, fertilizer, seeds, information, technology and training, etc.) access to markets and women's full membership in organizations.

Efforts to formulate sustainable development policies should recognize the impact of unsustainable practices on women, especially in relation to food security and marginal groups (women, households headed by women). Intra-household food allocation should be investigated and addressed if necessary.

Agricultural policies and technology must seek to eliminate drudgery, to improve economic efficiency and wages for the time spent by women, and to militate against the displacement of female labour.

Measures to increase productivity must be accompanied by policies to ensure commensurate increase in incomes, wages and other benefits for women.

- The families of suicide victims should be treated in the same way as victims of natural disasters such as earthquake.
- There must be a policy of crop insurance to mitigate the hardship due to crop failure.
- Guidance centre must be started to harmonize the functioning between banks/moneylenders and the women farmers.
- Women should be increasingly involved in the decision making process in agriculture. Even when the wife is Sarpanch, it is only her husband who takes all the decisions.
- Farmers particularly women farmers must be given loan at the nominal interest rate.
- Public Distribution System must be strengthened.

- The indiscriminate use of pesticides should be stopped to avoid the health hazards like burning of eyes, skin rashes, itching, giddiness.
- To help the farmers, minimum support price should be fixed for cash crops and plantation sector, as large number of women are involved.
- To enhance the income of women engaged in agriculture government should revive the agro-processing sector.
- As women have always been on the forefront to save the seeds, they should raise against the biopiracy and MNCs.
- Emphasis must be given on water harvesting and the seed varieties consuming less water.
- Awareness should be created among women involved in agriculture about the impact of globalization.
- Disparity in wages based on sex must be stopped.

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## **5. APPENDIX**

### **5.1 Charter of the National Alliance for Women's Food Rights**

Women and children suffer most when food rights are threatened therefore women and children's food rights must be at the center of our country's concerns :

1. We women from diverse groups and organizations demand that our Food Rights as enacted in the constitution be protected under any economic regime, and by all governments.
2. We demand that the government immediately act through policy intervention to arrest rising food prices and inflation, which are clearly linked to structural adjustment policies.
3. We call for the reintroduction of the essential commodities act service unregulated markets create freedom for hoarders and black marketers and make the ordinary public victims of harsh scarcities of essential commodities like food.
4. We call upon the government to strengthen the public distribution system (PDS). We demand on expanded system, which will include many more essential commodities. We demand that ration cards be given without hindrance to all those who require them. Food grains at half the price of ration supplies must be supplied priority in the distribution of cheap food grains and other essential commodities. Women should be given a special role in the running of these PDS network and the community should be encouraged to play a bigger role. This is essential to make a system more accountable and to prevent pilferage and black marketing. A multi-tried system needs to be established consisting of; national grain banks in which the government must play a stronger role, all the way to the micro level where community run and women run grain banks become the basis for household food security and a community level public distribution system.
5. We demand proper land use policy guidelines to prevent diversion of agricultural land for commercial purposes including aquaculture and horticulture. Common land and panchayat land is being handed over to commercial interests depriving the village poor of their use. We demand this practice be stopped and that the genuine implementation of land reforms, and an immediate halt to the removal of land ceiling laws and a stop to foreign direct investment (FDI) in agriculture. The removal of land ceilings and the opening of FDI in agriculture is increasing the numbers of landless and increasing the burden of the landless.

6. Declining public investment and encouragement of the corporate sector in agriculture leaves the farmers vulnerable to rural capitalists and multi-national corporations (MNCs). We call upon the government to encourage public investment and restrict MNC investment in agriculture.
7. We women call on the World Bank to stop the deliberate creation of hunger and malnutrition in India through structural adjustment policies especially those forced on agriculture.
8. We demand safe and healthy food for all. We demand the Government ensures that our food is free from chemical and non-chemical adulteration. Effective food safety provisions need to be in place to prevent adulteration, thereby enabling the public access to safe and healthy foods of our choice.
9. We outrightly reject genetically engineered foods. Genetically engineered foods are proving to cause retarded growth and immune deficiencies. Since women and children are the worst victims of malnutrition, health hazards due to the consumption of genetically engineered foods will be most severely felt by poor women and children.
10. We call upon the government to immediately stop the license for free importation of 1 million tonnes of soyabean (for our edible oil industry), which is not necessary from a point of view of peoples food rights and will pose threat to livelihoods of farmers, a large section of whom are women. It will also pose a threat to women and children's health since the government has failed to take actions to ban the importation of genetically engineered Soya or demand the separation and labelling of all genetically engineered foods.
11. We demand a halt to the use of imported food and unsafe food for welfare schemes such as the Integrated Child Development Scheme (ICDS) Mid day Meal programme, in which such foods as pre-processed corn blend is being used extensively. Not only is such imported food hazardous to our health due to the use of genetically engineered Soya, but also our local, nutrient-rich cereal and grain economy is being marginalized to support resource intensive production systems of the developed countries.
12. The government price support system must be reoriented to ensure the meeting of basic food needs for women and children. We call upon the government to increase procurement prices to staple foods especially those of millets and legumes, in order to encourage farmers to return to growing essential food crops. Non-food crops (for example, cotton, tobacco and jute) cultivated, as raw materials for industries should have no government procurement prices since industries can directly pay remunerative prices to farmers.
13. Women have always played an important role in the production and processing of food. Cottage and small industries income are being taken over by MNCs and big business companies encouraged by the government. Apart from destroying women's livelihoods, this also leads to the flooding of the market with expensive, unhealthy junk food. Food resources are being diverted on a large scale to this elite consumer market, creating scarcity for households and rising price rises. We

demand that food processing should be reserved for the small-scale sector. Such a reservation of the food processing industry for the small scale sector would be consistent with WTO requirements of national treatment, since we would be treating domestic industries in the same ways as MNCs by excluding both from entry into the food processing industry.

14. We call upon the government to restrict and ban all exports of essential food till all the fed. We demand that the food needs of women and children of this country are met first, and only the surpluses from meeting this need should be used for trade exports. Instead of women eating last and least relying on the leftovers for this sustenance, we demand that global trade be left with the leftovers only after the food rights of all within the country are met. The government needs to maintain vigilant monitoring of production, consumption and the food needs of all.

## **5.2 Women as Knowledge Keepers and Custodians of Cultural Diversity**

Nature has given us abundance; women's indigenous knowledge of biodiversity, agriculture and nutrition has built on that abundance to create more from less, to create growth through sharing.

- Women farmers share seeds freely and with sharing as a base, there can never be scarcity.
- The giving and sharing of food in abundance has been the basis of ensuring food security.
- The giving and sharing of knowledge has been the basis of the growth and evolution of knowledge. An economy of sharing is an economy of abundance.
- This worldview of abundance is based on sharing and on a deep awareness of human as members of the earth family. This awareness that in impoverishing other beings, we nourish ourselves is part of our present ecological knowledge and ancient wisdom.
- Without giving and sharing there can be no sustainability; with our sustainability, there can be no space.
- Diverse Women for Diversity (DWD) movement celebrates sharing for sustainability and peace through food festivals, exposure tours, training programmes in biodiversity conservation, sustainable agriculture, indigenous healing systems, water conservation, capacity building for leadership and good governance.

**IMPACT OF WTO  
ON WOMEN  
IN AGRICULTURE**

*By*

**RESEARCH FOUNDATION  
SCIENCE & TECHNOLOGY  
NEW DELHI**



**NATIONAL COMMISSION FOR WOMEN  
NEW DELHI**

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## FOREWORD

WTO agreements have been at the centre of national and international debates since the Uruguay Round of GATT and the establishment of W.T.O. on 1.1.1995.

In the decade that has gone by, two ministerial level meetings of W.T.O have collapsed, in Seattle in 1999 and in Cancun in 2003. Agriculture was at the core of the disagreements that led to the collapse. The Agreement on Agriculture has now been recognized as being unequal and unfair, with subsidies growing in the rich North, these subsidies being used for dumping artificially cheap products on the poor South, destroying livelihoods and incomes.

Most farm operations in India are women-centred. Food security depends on women's work, women's knowledge, women's skills – in seed saving, in agricultural production, in food processing, in local marketing, in cooking. Women are the providers of food, and custodians of the heritage of biodiversity of crops and cultural diversity of food.

Women's status, power, relevance is, therefore, being impacted by W.T.O rules at every level of the food chain. The Trade Related Intellectual Property Rights Agreement is transferring control over knowledge of seed and biodiversity from rural women to global corporations. The cases of the bio-piracy of Neem, Basmati, and wheat are not just cases of attempts to transfer the heritage of the South to the North. They are cases of usurping the knowledge and expertise of women. The industrialized corporatised agriculture promoted by the Agreement on Agriculture is robbing women of livelihoods in food production and food processing.

Losses of incomes under conditions of poverty translate into the loss of life and dignity. The Rs.1 trillion annual losses suffered by rural producers due to globalisation of agriculture are not just a financial loss – they are leading to a human tragedy.

This study and public hearings commissioned by the National Commission for Women and carried out by the Research Foundation for Science, Technology and Ecology, through its gender programme, Diverse Women for Diversity, is the first assessment of the gender impact of W.T.O and the globalisation of agriculture.

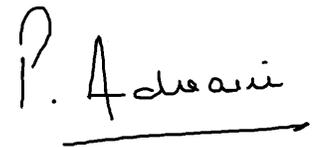


The public hearings organized in four regions of India – Punjab, Bengal, Bundelkhand, Karnataka- have allowed rural women to speak for themselves. And the women have shown how the impact of W.T.O is not just economic – loss of livelihoods and rural income. These economic impacts translate into a social crisis. Rising costs of production and declining prices are leading to debt; unpayable debt is forcing farmers to commit suicides, and women farmers are left to look after their children, without land, without assets, which have gone in paying the farm debt. As livelihoods disappear, women are being increasingly pushed to become victims of trafficking. And women and children face the harshest consequences of the collapse of the food security systems.

Globalisation has increased the violence against women in all its forms – economic, political, and physical. The worst violence is expressed in the growing trends of female foeticide in high economic growth regions.

The women have spoken. It is now the turn of policy makers to listen and formulate policy to protect the livelihood, dignity and the very right to life of women. The lives of women need to enter the calculus of economic growth. If 8% growth translates into 8% women disappearing, is our society richer or poorer? Are we more “developed” or more “under developed”?

The report on the “Impact of W.T.O on Women in Agriculture” is a wake up call to the nation. We are deep in an agrarian crisis. And rural women are the worst victims. But they are also at the cutting edge in creating alternatives that generate rural employment, protect bio-diversity, promote healthy, nutritious, culturally diverse food systems. Women when organized are determined to keep food security in their hands to defend the nation’s food security.



**POORNIMA ADVANI**

Chairperson

National Commission for Women

Place : New Delhi

Date : January, 2005

## **PREFACE**

Diverse Women for Diversity, the gender programme of the Research Foundation of Science, Technology and Ecology, carried out a study on Impact of W.T.O. on Women in Agriculture for the National Commission for Women. The research study was combined with Jan Sunwais in Punjab, West Bengal, Karnataka and Bundelkhand to provide a platform for the voices of the rural women, and hence the impact directly from them.

The objective of the study was do a gender sensitive analysis of the impact of W.T.O. on Women in Agriculture, and on the basis of the Jan Sunwais and research analysis, involve a gender sensitive trade and agricultural policy. The Jan Sunwais was organized to hear the voices of local women on the problems they are facing due to :

- (i) Shifts of knowledge and control over seed and biodiversity from women to global corporations.
- (ii) Trade liberalization of agriculture leading to loss of livelihood, women's employment and entitlement and hunger.

The Jan Sunwais also gave platforms for women to suggest alternatives that would improve livelihood and food security and strengthen decision making in agriculture.

Diverse Women for Diversity is happy to present the report of the study and Jan Sunwais as "Impact of W.T.O. on Women in Agriculture".

**Dr. Vandana Shiva**  
Founder  
Diverse Women for Diversity

**Women Fight Police during  
the Tebhaga Movement when  
the slogan was**



**“Jan Deba, Ddhan Debo na”**  
(we will give our lives, but will not give our rice)

**PART - I**  
**AN OVERVIEW**