CHAPTER II
LITERATURE SURVEY
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Literature Survey

The literature survey has been subdivided into following five categories:

Gender wise participation/ownership in farm/animal and related activities, females in decision making in farming, access of rural women to productive resources in farming, women in agriculture and allied sector, challenges faced by women. Being the women intensive areas, the chapter also contains at length the information regarding some of the allied sectors (sericulture and floriculture) and self-help group. The literature review covers the developing countries of Asia (India, Bangladesh and Nepal countries) and the Africa (Ghana and Mozambique countries mainly) continents. Finally, the chapter concludes the literature review followed by the research gap.

2.1 Gender Wise Participation

2.1.1 Asia

2.1.1.1 India

Contrary to the common perception about women in India, a large percentage of them work (Women of India, 2006, Wikipedia). The National data collection agencies accept the fact that there is a serious under-estimation of women's contribution as workers. However, there are far fewer women in the paid workforce than there are men (Kalyani and Kumar, 2001, Wikipedia). In urban India women have impressive number in the workforce and they are at par with their male counter parts in terms of wages, position at the work place (Singh and Hoge, 2010). In rural India, agriculture and allied industrial sectors employ as much as 89.5% of the total female labour (Asia's women, 2006, Wikipedia). In overall farm production, women's average contribution is estimated at 55% to 66% of the total labour. According to a 1991 World Bank report, women accounted for 94% of total employment in dairy production in India. Women constitute 51% of the total employed in forest-based small-scale enterprises (Asia's women, 2006, Wikipedia). Agriculture (including allied activities) accounted for 14.6 per cent of the Gross Domestic Product in 2009-10 but its role remains critical as it accounts for about 58.2 per cent of the employment in the country (Economic Survey 2010-11). Apart from being the provider of food and fodder, its importance also stems from the raw materials that it provides to the industry. The
prosperity of the rural economy is also closely linked to agriculture and allied activities.

According to population census of India 2001, out of total rural population of 741.7 million, there are about 402.5 million rural workers of which 127.6 million are cultivators, 107.5 million are agricultural labourers and 167.4 million are other farm workers, out of which 6 million are engaged in livestock, forestry and plantations. 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). 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. The latest available agricultural census data (Government of India, Agricultural Census Division, and 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).

Table-2.1

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Rural Population</th>
<th>Cultivators</th>
<th>Agricultural Labourers</th>
<th>Other Farm Workers</th>
<th>Rural Worker</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td>741.7</td>
<td>127.6</td>
<td>107.5</td>
<td>167.4</td>
<td>402.5</td>
</tr>
<tr>
<td></td>
<td>(72.22)</td>
<td>(31.7)</td>
<td>(26.7)</td>
<td>(41.6)</td>
<td>(100.0)</td>
</tr>
</tbody>
</table>

Source: Registrar General of India, New Delhi, 2001

Census figures show similar trend as regards increase in women's share of agricultural employment in the post-reform period. Between 1991 and 2001, the agricultural sector saw a decline in rural main workers from 183 million to 171 million, a reduction of 11.7 million male and a mere 0.5 million female workers-taking women's share in the main agricultural workforce from 27 per cent to 29 per cent (Table 2.2). This trend would have been extended into the new millennium. We would know this for sure once the data for 2011 becomes public.

Table 2.2: Main workers in agriculture, 1991 & 2001

<table>
<thead>
<tr>
<th>Year</th>
<th>Persons</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Cultivators</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1991</td>
<td>110.7</td>
<td>88.5</td>
<td>22.2</td>
</tr>
<tr>
<td>2001</td>
<td>103.6</td>
<td>78.3</td>
<td>25.4</td>
</tr>
<tr>
<td></td>
<td>Agricultural labourers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1991</td>
<td>74.6</td>
<td>46.2</td>
<td>28.4</td>
</tr>
<tr>
<td></td>
<td>2001</td>
<td>2001</td>
<td></td>
</tr>
<tr>
<td>------------</td>
<td>-------</td>
<td>-------</td>
<td></td>
</tr>
<tr>
<td>Plantation, livestock, forestry, fishing, and allied activities</td>
<td>63.5</td>
<td>41.1</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1991</td>
<td>2001</td>
<td></td>
</tr>
<tr>
<td>All agricultural workers</td>
<td>10.3</td>
<td>6.7</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1991</td>
<td>2001</td>
<td></td>
</tr>
<tr>
<td></td>
<td>191.3</td>
<td>177.4</td>
<td></td>
</tr>
</tbody>
</table>
| Source: Saxena Naresh C., Women, Land and Agriculture in Rural India, Pp-11 [http://www.unwomensouthasia.org](http://www.unwomensouthasia.org)

Male migration is affecting traditional social norms too. As men migrate in search of better-paid work, women in rural India are taking over agricultural work in the villages. They face meagre wages, long hours, hazardous work and sexual harassment (WTO, 2010). The existence of patriarchy at all levels also intertwines with the work-related problems of women.

### 2.1.1.1 Agricultural Land Use in the Himalaya Region

Emergence of land use changes is a continued evolutionary process set in from the beginning of advancement of human civilization. In a historical perspective, hunting and gathering from the wild was the starting step for securing survival. This gave rise to shifting agriculture followed by settled agriculture. Shifting agriculture continues to be the major agricultural system on the forest slopes in north-eastern tribal belts, while its occurrence in the central and western Himalaya is rare at present. Settled agriculture on terraced slopes in mid elevations (up to 1800-2000m above MSL) or unterraced gentle slopes in high elevations (above 1800-2000 m MSL) is the major agricultural land use in the central and western Himalaya. Diversity of domesticated crops in the region is very high when compared with low land agricultural systems. Crop diversity is managed by mixed cropping and/or with crop rotation. Valleys all through the Himalaya are much more intensively cropped than the slopes.

Technological innovations such as fertilizers, pesticides and high yield crop Varieties which transformed low land agricultural areas, could not change the mountain Farming system to the same extent, on account of mountain specific constraints. Dependence on forests for maintaining soil fertility in crop lands or expansion of agricultural land itself thus was not substituted by the new technologies. As forests and livestock provide material and energy inputs in traditional mountain farming systems, expansion of traditional agriculture runs the risk of forest degradation. So, in order to meet the present and future challenges meeting sustainability criteria, the traditional systems need to be adapted in ways which enhance crop yields but not at the environmental and social costs (Ramakrishnan et al., 1992).
2.1.1.2 Women’s Significant Contribution to Agricultural Production in the Himalayan Region

The urban sprawl is exceedingly high in the state of Mizoram where about 46% of population is urban. Himachal Pradesh and Sikkim are the least urbanized states. Males outnumber females in all areas except for rural areas of Uttar Pradesh Hills and Himachal Pradesh. States in the north-eastern region have achieved a higher level of literacy as compared to those in the central and western Himalaya. Agriculture is the focal activity of hill dweller all through the region. Excepting the state of Tripura, the proportion of women cultivators is more than that of men. In Tripura, more women are reported to be engaged as agriculture labourers and in other occupations.

(Shiva, 1991) In overall 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 one hectare farm, a figure that illustrates women’s significant contribution to agricultural production. (Sujaya, C.P. 2001) is also of the same opinion.

2.1.1.3 Sikkim Agriculture Sector Before and After the Merger with India In 1975

Before the merger in 1975, the agriculture sector was characterized by uncertainty about land tenure rights, negligible public investment and over-dependence on traditional technologies. In the past low productivity, negligible marketable surplus and other institutional inadequacies, which plagued the economy, led to agricultural backwardness. In the post-merger period, the strategy was to provide a package of services aimed at consolidating peasant economy. This covered land reforms, agricultural credit and marketing, provision of inputs like seeds, fertilizers, minor irrigation, and encouragement to horticulture and cash crops. Thus, despite the limited cultivable land in Sikkim, agricultural development has made considerable progress during the last two decades. Introduction of new crops (including wheat, rajmah, rape and mustard), extension of more areas under high-yielding and improved varieties of seeds, increased use of fertilizers and pesticides and expansion of area under double or multiple cropping have been successful in converting agriculture from subsistence farming into an economically viable venture.
Land Reform in Sikkim

(Lama, 2001, pp.34) Among the numerous land reform measures adopted by the State Government; the most notable are the enactments of Sikkim Agricultural Land Ceiling and Land Reforms Act 1977, Cultivators Protection Act 1985, and the Land Bank Scheme of 1995. The Land Bank Scheme is the latest welfare scheme introduced by the Government of Sikkim to consolidate land reform measures in the State. Under this scheme the landowners donate a certain part of their land, entirely voluntarily, to the government. This land is then distributed to the landless (Sukumbasis), identified by the department concerned on the basis of a detailed survey. A landless household is now entitled to half an acre of land, with the settlement deed carrying the names of both husband and wife. The upper limit of the land cost has been fixed at Rs. 25,000. The success of this scheme reinforces the fact that the programme of land reforms implemented so far has not led to any significant redistribution of land in Sikkim. This has had adverse effects on both social cohesiveness and agricultural productivity.

2.1.1.4 The Status of Women in Sikkim

(Lama, 2001, pp.33-34) The State seems to have recorded several achievements, reflected also in the level of the HDI and GDI, in the social sectors. In Sikkim, women constitute nearly 47 per cent of the total population. Their social position in the State seems to be better than that in the rest of the country. Women also play a major role in trading activities, which allows them to participate in decision-making far more than in most other States in India. In contrast to the unfavourable sex ratio in the population as a whole, the number of women in government employment is greater than that of men. The role of women’s empowerment for a just society was highlighted in the Beijing Conference (1995). The status of women in Sikkim—their economic contribution, socio-cultural autonomy, authority, involvement in the decision-making process within the household—varies across communities. The practice of polyandry among tribal communities could be one of the variables explaining the higher value attached to women. Similarly, local religious practice also plays a role in influencing the status of women (Dhamala, 1985).

Women Participation in Different Farm Operations in Sikkim

Sikkim has a tradition of collective decision making by communities through the institution of the ‘Dzumsa’. However traditional institutions do not witness a significant role for women. The empowerment of women however, has to be at the core of state strategies and action. Still a woman
is considered to be an asset in the household and commands a bride price, but she has no rights of inheritance. It is only when a daughter remains unmarried that parents customarily transferring some property to her. Participation of women in economic activities is high in Sikkim. The women, especially in the rural areas, are involved in agricultural operations from sowing to harvesting. It has been their responsibility traditionally, to collect fuel wood and fodder for the family, and fetch water from dharas (springs) in vessels which they carry in a doko (basket) on their backs. They are responsible for all domestic tasks including the caring for domestic animals. Women also work as paid agricultural labourers, construction workers, and take part in economic activities like selling of vegetables in the market place. They contribute to the income of the family also through their traditional skills in spinning and weaving. Given the geographical conditions of rugged steep terrain, heavy rainfall etc., the women have to directly bear the brunt of all climatic hazards. The heavy load of work in the daily lives of Sikkimese women has serious implications for their health. This is more so because the families are large in Sikkim—30 per cent of rural families and 22 per cent of urban families have more than 6 members. Heavy workload coupled with early marriages, between 16–20 years; take their toll on women’s health. This is reflected in the declining sex ratio in the age group of 29–60 in Sikkim.

(Rahman et. al. 2009) In Sikkim, though men and women do almost all works from land preparation to seed storage. But at the same time, their role depend more on the family situation than on gender or ethnicity. In a family with more male members, male works in the fields, whereas in families with fewer men, women work equally with men. Purchasing of seed is generally done by men. Men do the ploughing while men and women do the hoeing and digging. Sowing, planting, manure application, harvesting is done by both men and women. Mulching is done mostly by men, although women help as when required. Weeding is done by women. In Sikkim, mother rhizome extraction is done by women but its sale is looked after by men. In Meghalaya, Mizoram and Nagaland, women play a significant role in retail selling of Ginger.

(Sadangi et al., 1996) The study found that in rural areas the women belonging to higher caste families are socio-economically better and possess some landed properties. Due to their higher social status, they do not like to engage themselves in difficult field work or in the fields of lower caste people.
Women in Animal Husbandry

(Bhasin, 1995) India is dominated by the rural population and due to backwardness, bulk of them are engaged in primary activities. Among the occupations, majority of the people are engaged in primary activities in India. Sikkim being a mountainous state, among the primary occupations, livestock rearing plays an important role in maintaining the livelihood pattern of the hill dwellers. So, animal husbandry sector is the main source of supplementary income for the rural households of Sikkim. Livestock production had always been an integral part of the rural livelihood in Sikkim. The livestock wealth of Sikkim still constitutes a natural resource base with immense livelihood implication.

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.

2.1.1.5 Women and Ownership of the Land

Women Work the Land but do not Inherit it

(Sridhar Lalitha, 2003) The new Human Development in South Asia 2002 report which was launched in Chennai, India, on 16 May 2003, under the aegis of the United Nations Development Programme (UNDP) and the M.S.Swaminathan Research Foundation (MSSRF) says that women are mostly denied of the right to own land. In South Asia, land is not only an economic factor of production; its ownership also reflects the economic power structures within society that guarantee access to important agricultural inputs. Both laws and customs prevent women from owning land. Under specific religious laws women are entitled to smaller shares than men. Islamic law in South Asia (and some Christian sects) provides for a half-share for daughters. Even when women inherit land, certain additional conditionalities may be attached. In Nepal, for instance, only unmarried daughters above the age of 35 can inherit land. Also, customarily, women do not want to risk incurring hostility from male family members that may result in violent acts committed against them. The report cites land-motivated 'witch killings' in Bihar, India, as one example. It has also reported gender discrimination in rural remuneration and says that the women in agriculture sector are overburdened as more men are migrating to urban areas or abroad.
Therefore, for more food security it emphasizes the importance of agriculture, the mainstay of the South Asian economies for the development purposes. It equally accentuates that due acknowledgment should be given to its major contributor i.e. women.

- **Women Who Own Property are Less Likely to Face Marital Violence**

(Info Change News & Features, August 2003) A joint study by Pradeep Panda of the Centre for Development Studies Trivandrum, and Bina Agarwal of the Institute of Economic Growth, Delhi, has analysed this issue in some detail, though not much literature is seen on the issue. The survey covered 502 married rural and urban women within the age-group 15-49, in Kerala's Trivandrum district. This was a good location for the survey as Kerala has several traditionally matrilineal communities that recognize women's property claims and therefore has a sufficient sample of women who own property. In this study four categories came up for analysis: physical and psychological abuse, long-term violence (violence that had occurred at least once during the woman's married life) and current violence (violence that had occurred within the past year). It also looked at various forms of physical violence including slapping, hitting, kicking, beating, and psychological abuse -- insults, belittlement, threats, etc. The surveyed households covered every income category. The respondents' average age was 33 years, the average length of marriage was 12 years, and, in 78% of the cases, the marriages were arranged (two-thirds were with the woman's consent). About 43 households belonged to traditionally matrilineal castes. Overall, 34% of the sampled women owned either land or a house or both. Some 6% owned only land, 14% had only a house and 15% had titles to both. While the majority of propertied women belonged to traditionally matrilineal castes, 35% of the matrilineal caste women did not own property.

Despite Kerala's favourable human development indicators, the survey revealed a high incidence of both physical and psychological violence towards women. The study's findings did bear out the fact that ownership of immovable property by women is associated with a dramatically lower incidence of both physical and psychological harassment, as well as long-term and current violence. For example, as many as 49% of the women who owned neither land nor house suffered long-term physical violence, compared with 18% and 10% respectively of those who owned either land or a house, and 7% of those who owned both.

The effect of property ownership on psychological violence is even more dramatic. While 84% of property-less women suffered abuse, the figure was a much lower (16%) for women who owned both land and a house. The ownership of property also offers women the option of leaving
an abusive environment -- of the 179 women experiencing long-term physical violence, 43 left home. The percentage of women leaving home was much higher among the propertied (71%) than among those without property (19%). Moreover, of the women who left home, although 24 returned, 88% of the returning women were property-less. Few propertied women returned. In contrast to a woman's property ownership status, there seems to be no clear relationship between risk of violence and employment status, except if the woman has a regular job. This reduces the risk only of long-term physical violence. Employment does not offer the same protection to women as does property ownership. Many women are unpaid workers on family farms or have insufficient earnings to rent a place for themselves. Rented accommodation is not readily available to women and there are social barriers to be considered. Indian landlords are often suspicious of single women tenants. Land access enhances a woman’s livelihood options and gives her a sense of empowerment.

**Women and Property Rights in Sikkim**

(Chandrakala Diyali, pp-72) The Indian Hindu succession Act of 1956, established the currently prevalent Hindu Personal laws, inheritance or marriage; which govern other religious communities like Sikh, Jain and Buddhists in India. It is not applicable to the Bhutia-Lepchas people in Sikkim, though they are Buddhists by religion barring a handful of Christian Lepchas. The Hindu laws, except Hindu marriage act of 1955 have not been extended or enforced in Sikkim even after its merger into the Indian union in 1975. So the Bhutia-Lepchas people in Sikkim are still governed and guided by their customary laws; in respect of succession, inheritance and also of marriage. As the Bhutia Lepchas people of Sikkim follow the patriarchal family system, all the property either movable or immovable; belong to the father or head of the family. After the death of the father the eldest of his sons becomes the head of the family and takes charge of the property. As far as the property matters are concerned, the women except for their movable personal belongings, ornaments and utensils etc. have no locus-stand and legal rights in the family property. But according to unwritten norms of the society there are ample provisions for safeguarding the interest of the female members of the family. This is the social principal that has to be followed by every family’s head. Though the Bhutia-Lepchas women has no legal rights in the property usually the daughters, sisters, aunts and near cousins are given gifts of immovable assets in the form of livestock, utensils, ornaments and other useful materials etc. The rich and well to do family sometimes may give a piece of cultivated land or a house to the daughters or sisters. But that they give out of compassion not as per law. The daughters or sisters can take those gifts along
with them when they marry and go away from their parental house. The laws which, Bhutias and Lepchas are governed by, does not allow the daughter the right to inherit the properties of their father even when there are no sons. If a Bhutia-Lepchas man dies leaving behind his widow and daughter only, with no sons, the widow shall inherit the property only for her life and on her death, the property shall revert back to male agnates of her late husband but not the daughter. Women are not entitled to sell, transfer or mortgage that property of her late husband. The Bhutia-Lepchas women may, however, acquire property by way of gift or under a will from her father or other relations. But under the Married Women Property Regulations Act, 1962, if Bhutia-Lepchas women marry a non Bhutia-Lepchas person, she will forfeit her rights to such properties.

2.1.1.1.6 Women and NREGS

- Reasons to justify Women’s Participation under NREGS

There are various explanations for the varying participation of women workers under the MGNREGS. Factors that have encouraged women worker’s participation include the nature of the job not requiring special knowledge and skill (Krishnaraj et. al. 2004) in the context of MEGS; outmigration of male family members (Bhatty, 2006; Mehrotra, 2008; Talukdar, 2008); provisions in the act- like work within a radius of five kilometres from the house, enables the employment opportunity being available at the doorstep (Bhatty, 2006; Khera and Nayak, 2009); a tradition of rural women working in other’s fields (Narayanan, 2008); the provision in (Schedule II (34)) of equal, non-discriminatory wages (Sudarshan, 2008; Khera and Nayak, 2009); and innovative experiments in implementation like the female mate system in Rajasthan (Khera, 2008), synergisation of MGNREGS with Kudumbashree in Kerala (Vijayakumar and Thomas, 2008) and in Bihar, gender differential tasks for uniform (minimum) wages (Pankaj, 2008).


The case study which was conducted in Namthang Block located in the south-central part of Sikkim and lies in the watershed of the Tista River showed how the construction of roof water harvesting tanks (under MG-NREGA) helped the people of the area in resolving the fundamental water scarcity problem.
Farming is the main stay of the rural population of this drought prone area and in spite of availability of land, labour and farming skills; water was proving to be the biggest constraint in successfully raising agriculture crops thereby stagnating the rural incomes. There is water shortage especially from Oct to March because there is hardly any rainfall during these months and nearly 76% of the households suffer from water scarcity during winter. So, they decided to create water storage tanks which could be filled up from the perennial spring water. Under MG-NREGA guidelines, contractors, middlemen and nominees are banned and the villagers mostly women took upon themselves to directly implement these works jointly with the Block and Village level officers. Most of the households had completed 100 days during the financial year 2009-10.

The people planned to take up 20 such tanks in each ward, with a total target of 140 such tanks in the 7 wards of Chuba Phong GPU which was amongst the driest. This was the first time that such spring water storage tanks of about 10,000 liter capacity each and costing about rupees 97,000 each have been taken up under MG-NREGA.

Namthang inhabitants used to face a lot of problems due to lack of water. They used to carry water a long way, which was very tiresome and difficult. Scarcity of it was resulting the farms to get dried up and ruining the cultivation. They suffered great domestic problems also because of insufficient finances. For any kind of cultivation like chilly, tomatoes, spinach, water plays an important role. So, construction of roof water harvesting tanks helped them in resolving this fundamental problem. This scheme proved to be very beneficial and act as an asset for them.

Chuba Phong village beneficiary are making use of every single drop of water, either through rain or other sources. They are getting the water from roof channel and pour it in the harvesting tank in order to fill it up, and make use of it in the farming at the time of scarcity to convert dry and barren land into arable one. With this type of water conservation NREGA scheme they are able to earn income even during non-monsoon months.

2.1.1.1.7 Secondary Sector in Sikkim

• (Lama, 2001, pp. 17-18) The structural change, generally reflected in the shift from the primary to the secondary sector, is virtually absent in Sikkim. Industries, in fact, are still a low priority item in Sikkim’s plan process. In Sikkim, the structural shift has been slower than in the country as a whole. In 1995–96, India’s shares were 30.58 per cent (primary), 25.47 per cent
(secondary) and 43.94 per cent (tertiary), while the respective shares for Sikkim were 52 per cent, 13 per cent and 34 per cent.

- (Singh, E. Bijoykumar, 2009) The paper has analysed the nature of growth, both at the aggregate level and sectorial level, among the eight states in the North Eastern Region (NER) using NSDP data. It has studied that during the entire period the share of primary sector has declined substantially and that of tertiary has increased. Table 2.3 shows that by 2006-7 except for Manipur tertiary sector has become the predominant sector in all the states. In Manipur due to a spurt in construction activities secondary sector surpassed the tertiary sector. Besides Manipur Arunachal Pradesh is another state with a high share of secondary sector. Except for Arunachal Pradesh and Manipur (in which due to a spurt in construction activities, the contribution of secondary sector surpassed the tertiary sector and dominates in the annual growth rate), the main source of growth in per capita income is tertiary sector. In none of the states in the North-Eastern region is the primary sector the main source of growth though it contributes a significant proportion in Arunachal Pradesh, Assam and Sikkim. It shows the growing role of the non-commodity producing sector in the growth of the economy. The falling share of primary sector in income generation along with the high share in employment indicates falling productivity in this sector. The benefits of growth accrue largely to the small portion of workers in the tertiary sector. This will accentuate the extent of inequality.

The study also shows that in terms of the more encompassing measure of development i.e. human development index, three out of the five states whose HDI have been estimated had HDI higher than that of all India. Thus the income gap has been made up by better performance in education and health. Low rural unemployment rate need not necessarily mean abundant work opportunities in rural areas. It may be attributed to the inability of the rural labour force to remain unemployed for long because of their poverty. This indicates the strength of social capital which needs to be nurtured to attain higher level, by not insisting on mainstreaming.

Only Sikkim registered higher growth rate after the break in tertiary sector which has become more dominant than the primary sector in most of the states. This result further substantiates the irrelevancy of economic policy.
### Table 2.3

Share of primary, secondary and tertiary sector in total NSDP** (1999-2000 price) (As percentage of National Summary Data Page (NSDP))

<table>
<thead>
<tr>
<th></th>
<th>Primary</th>
<th>Secondary</th>
<th>Tertiary</th>
</tr>
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<td>46.70</td>
<td>46.84</td>
<td>25.07</td>
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<tr>
<td>Assam</td>
<td>43.01</td>
<td>39.42</td>
<td>34.20</td>
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<tr>
<td>Manipur</td>
<td>43.83</td>
<td>35.93</td>
<td>24.66</td>
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<tr>
<td>Meghalaya*</td>
<td>62.16</td>
<td>46.68</td>
<td>32.37</td>
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<tr>
<td>Mizoram*</td>
<td>24.24</td>
<td>16.24</td>
<td>7.42</td>
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<tr>
<td>Nagaland</td>
<td>40.49</td>
<td>23.32</td>
<td>34.91</td>
</tr>
<tr>
<td>Sikkim</td>
<td>39.93</td>
<td>43.62</td>
<td>21.69</td>
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<tr>
<td>Tripura</td>
<td>53.01</td>
<td>46.19</td>
<td>25.57</td>
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</table>

Source: Singh, E. Bijoykumar (2009)
Note: * terminal year for Mizoram is 2007-8
**The 1999-2000 series has been constructed by splicing the trend values of the values for the period 1980-1 to 1998-99.

### Sectional Contribution in Sikkim Economy

### Table 2.4


<table>
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<th>Sector</th>
<th>2004-</th>
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<td>6892</td>
<td>9411</td>
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<td>11842</td>
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<td>21657</td>
<td>24061</td>
<td>25164</td>
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<td>31401</td>
<td>32213</td>
<td>35863</td>
<td>60889</td>
<td>63487</td>
</tr>
</tbody>
</table>

Source: Central Statistical Organization (CSO) (As on 02.08.2011).

Table-2.5
Gross State Domestic Product (GSDP) at Factor Cost by Industry of Origin in Sikkim, \{(At Constant 2004-05 Prices) (2004-2005 to 2010-2011)\}: (Rs. in Lakh)
Gross State Domestic Product (GSDP) at factor cost by industry of origin in Sikkim at constant 2004-05 prices in Table-2.5 shows that during the entire period the share of primary sector has grown only by 26.47%, while growth in secondary sector which has registered a substantial increase of 183.3% even surpassed the tertiary sector which grew by 98.5% during these years. Secondary sector has become the predominant sector in the state mainly due to a spurt in electricity, gas and water supply activities of the secondary sector.

- **Migration to Urban Areas Involves both “Push” and “Pull” Factors**

The decision to migrate involves both “push” and “pull” factors (Lewis, 1954; and Harris and Todaro, 1970). The Lewis model explains migration as a transfer of labour from labour-surplus sectors (rural areas/The Subsistence Sector) to labor deficit-sectors (urban areas/The capitalist) until a balance is reached. The Harris-Todaro model on the other hand, postulates that migrants assess various labour market opportunities available in the rural and urban sectors and choose the one that maximizes their expected gains. This model explains some of the deficiencies inherent in the Lewis model such as the rise in rural-urban migration in the context of rising urban unemployment. Overall, some empirical studies found that economic push factors (such as, the lack of rural credit, unemployment, and rural poverty) are most important; while others suggest that economic pull factors (such as, perception of high wages from urban employment) are dominant.

- **Solid Waste Management is the Number One Civic Problem of Gangtok**

(UDHD, website) Solid Waste Management is one of the most pressing problems of the entire city of Sikkim but, mainly of Gangtok. With most of the people moving towards Gangtok, highly unhygienic conditions prevail in many areas that do not have any regular service of solid waste collection. It is a common practice in such areas to throw the household garbage into the nearest water course (Jhora) where it not only chokes the Jhora, but causes a danger to public health by way of purification, breeding of insects and mosquitoes etc. A problem in improving solid waste collection has been coverage of inaccessible houses and lack of service in the outlying areas, which are very much urban but not covered under the jurisdiction of notified town area. In view
of the difficult topography and many houses being located in inaccessible areas, improving solid waste collection may well be described as the number one civic problem of Gangtok. With the increasing physical growth of the city and development trends, it has become an urgent need to plan for a feasible and sustainable solid waste management, as an integral part of proposed urban development.

- **Use of Fire-wood has not changed Over a Period of Time in the State**

Figures in tables 2.6 and 2.7 for households by type of fuel used for cooking confirm the fact that though state government is providing huge amount of subsidy/almost free distribution of LPG connections, still there is widespread use of fire-wood for cooking. As is evident from the tables below, over a period of ten years i.e. from 2001-2011, though the use of LPG for cooking has increased from 19 to 41 percent, but the use of fire-wood for cooking has been decreased only from 65 to 53 percent. The tables below are also revealing that the use of biogas for cooking has not increased.

<table>
<thead>
<tr>
<th>Type of fuel used for cooking</th>
<th>Total</th>
<th>%</th>
<th>Rural</th>
<th>%</th>
<th>Urban</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>104,738</td>
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<td>91,723</td>
<td>100.0</td>
<td>13,015</td>
<td>100.0</td>
</tr>
<tr>
<td>Fire-wood</td>
<td>67,661</td>
<td>64.6</td>
<td>67,189</td>
<td>73.3</td>
<td>472</td>
<td>3.6</td>
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<tr>
<td>Crop residue</td>
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<td>0.8</td>
<td>802</td>
<td>0.9</td>
<td>25</td>
<td>0.2</td>
</tr>
<tr>
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<td>65</td>
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<td>59</td>
<td>0.1</td>
<td>6</td>
<td>0.0</td>
</tr>
<tr>
<td>Coal, lignite, charcoal</td>
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<td>61</td>
<td>0.1</td>
<td>15</td>
<td>0.1</td>
</tr>
<tr>
<td>Kerosene</td>
<td>15,201</td>
<td>14.5</td>
<td>11,200</td>
<td>12.2</td>
<td>4,001</td>
<td>30.7</td>
</tr>
<tr>
<td>LPG</td>
<td>19,718</td>
<td>18.8</td>
<td>11,402</td>
<td>12.4</td>
<td>8,316</td>
<td>63.9</td>
</tr>
<tr>
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<td>519</td>
<td>0.6</td>
<td>2</td>
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</tr>
<tr>
<td>Biogas</td>
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<td>0.1</td>
<td>89</td>
<td>0.1</td>
<td>4</td>
<td>0.0</td>
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<tr>
<td>Any other</td>
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<td>0.0</td>
<td>3</td>
<td>0.0</td>
<td>-</td>
<td>0.0</td>
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<td>No cooking</td>
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<td>0.5</td>
<td>399</td>
<td>0.4</td>
<td>174</td>
<td>1.3</td>
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Table-2.7
Households by Type of Fuel Used for Cooking

<table>
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<tr>
<th>Type of fuel used for cooking:</th>
<th>Total</th>
<th>%</th>
<th>Rural</th>
<th>%</th>
<th>Urban</th>
<th>%</th>
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<td>Total</td>
<td>128131</td>
<td>100</td>
<td>92,370</td>
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<tr>
<td>Fire-wood</td>
<td>67,310</td>
<td>53</td>
<td>65,418</td>
<td>70.8</td>
<td>1,892</td>
<td>5.2</td>
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<td>Crop residue</td>
<td>769</td>
<td>1</td>
<td>685</td>
<td>0.7</td>
<td>84</td>
<td>0.2</td>
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<tr>
<td>Cow dung cake</td>
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<td>0</td>
<td>198</td>
<td>0.2</td>
<td>21</td>
<td>0.05</td>
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<tr>
<td>Coal, lignite, charcoal</td>
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<td>34</td>
<td>0.03</td>
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<td>0.1</td>
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<td>Kerosene</td>
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<td>2,656</td>
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<td>22,438</td>
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<td>307</td>
<td>0.3</td>
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<tr>
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<td>0.09</td>
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</table>


2.1.1.2 Bangladesh

- **Women’s Activities are Confined to the Home and Homestead in Rural Areas**

(Wennergren Boyd E. et al., 1986) The status of women in Bangladesh is a product of many years of cultural, social, and religious traditions. The practice of purdah in this predominantly Muslim society with its condition of female dependence and gender segregation has provided a strong historical basis for establishing women's roles and attendant division of labor within the household. In rural areas, women's activities are limited primarily to the home and homestead. Overall, the inferior status of women has been detrimental to their access to education, nonagricultural employment, and participation in political activities. The system however is being challenged, as poverty is forcing destitute women from traditional roles and even in the urban middle class, economic pressures are pushing women into employment outside the home. Employment options are restricted by the slow pace of economic development and the critical absence of job skills. Education for women is seen as a priority element in Bangladesh's development strategy.

- **Education and Loans from NGOs Proved to be More Effective in Providing the Landless an Access to Land Rather than any Re-Distributive Land Reform**

(Akanda, 2008) This research analysed the changing pattern of land market under a land decreasing condition. Several re-distributive Land Reforms were undertaken to balance landholdings in favour of the land-poor under ‘landlord biased’ agricultural policies in Bangladesh (Griffin, et al,
2002). Those reforms were ineffective, not only because of problems in implementation but also decreases in owned land per household after sub-divisions among heirs (Rahman, 1998). This study has not suggested any re-distributive land reform because even the landless was lately found to purchase land using their non-farm incomes and loans from NGOs. Therefore, education and other supporting programs for non-farm income generation would be more effective to provide the landless an access to land rather than any re-distributive Land Reform. Unequal distribution of privately owned land is one of the critical agrarian problems in rural Bangladesh (US country studies 2011, website).

- **Inequality of Land Ownership as a Key Factor for Farm Income Inequality**

Some previous research focused on the changes in land ownership using macro-level data. (Hossain, 1989) identified that the inequality of land ownership as a key factor for farm income inequality. (Islam and Omori, 2004) also identified this inequality as a major factor for income inequality. In land market analysis, (Hossain, et al. 2003) observed a decreasing trend of land transactions through purchases and sales during 1987 and 2000. This was because many farmers facing a hazard tried to overcome it by engaging in non-farm activities rather than selling land. However, land purchase was found negative for land-poor farmers. (Griffin, 1974) stated that land-rich farmers could buy-out lands from land-poor farmers using their surplus production. However, (Griffin, et. al 2002) reported that the inequalities of land ownership were not changed at all in rural Bangladesh during 1991 and 1995.

- **Inequality in Female’s Share of Different Sized Landholders**

Since there was no institutional law, so, no land was transacted as share given to females in the sub-clan in the earlier years of the ‘reckless creation of inequality under deceptive land market’ phase. Subsequently, medium and large farmers were found to give land to female sharers since the late 1940s and it was higher during 1945 and 1965 because of having many wives and daughters. However, the number of marriage decreased after enacting the Muslim Family Law in 1961 (WRC, 2000). The land shares of wives were not shown as it was ultimately gone to sons after their death. However, there were two wives of a deceased household took land away for having no child. In the ‘reaching to average distribution under distressed land market’ phase, land shares of females was given by the large and medium farmers. The female sharers belonging to large farmers used to get large amount of land and they were unwilling to waive their claim.
However, female sharers of small farmers did not claim strongly because they might lose their access to fathers’ houses after taking a small amount of land. Moreover, it was not easy to get land through court cases if the sons were not willing to give. As per the opinion of a lower court judge, land ownership was depended on deed, tax payment certificate and possession. Taking possession was found difficult even after getting the court order.

2.1.1.3 Nepal

• Contribution of Women is Higher Relative to That of Men in Agriculture

As far as women in Asian countries are concerned, Nepalese women are equally involved in both field and post-harvest work in crop production. Ploughing is considered a man’s job, whereas all other work, though shared by men, is mostly undertaken by women. Collecting and carrying compost to the field is normally performed by women (Katuwal, 1990, website). Women's involvement is more in producing major crops such as rice, maize, wheat, etc. (Regmi and Weber, 1997). In both rain fed and irrigated agriculture time spent by women is higher relative to that of men. In rain fed areas women devote 12.36 hours per person per day, whereas men do only 9.03 hours. Similarly, in irrigated zones women put in 11.61 hours per person per day whereas men do only 7.85 hours (Sharma, 1995).

• Women’s Contribution in Traditional Allied Sector is Tedious, Tiring and Time Consuming

Women in rural Nepal have a very close relationship with forests. Collecting fuel wood meets 95% of the cooking-energy consumption (Denholm, 1991). Collecting fodder and other forest products is most tedious and tiring, which has traditionally and primarily been performed by women (Ojha, 1989). Women’s task of buffalo raising requires a great deal of daily care the year round. An improved buffalo eats about two head loads of fodder per day, besides prepared feed (Bhatt et. al. 1994). More than three-fourths of household time spent collecting forest a product is done by women (Kumar and Hotchkiss, 1989). As deforestation advances and forest products become increasingly scarce, women are the ones who must walk further afield to collect fuel and fodder, adding hours to their already long work days. Where deforestation is high, time needed to collect one load of fuel wood increases by 75% and less time is allocated to agricultural activities (Kumar and Hotchkiss, 1989).
2.1.2 Africa

- Women are the principal players in Ghana’s agricultural sector

(Zaney G. D., 2011, website) Statistics from a research conducted by Action aid International in collaboration with Action aid Ghana reveal that there are about 3.4 million farm households in Ghana with smallholders, whose average farm size is only 1.2 hectares, accounting for 80 per cent of farm production. According to the research results, the most widely-grown food crops are maize and cassava, yam and plantain and cocoa and palm oil while over 80 per cent of households own livestock. The research results also show that women constitute more than half of the agriculture labour force in Ghana and produce about 70 per cent of the country’s food. Of those involved in agro-processing, women constitute 95 per cent while of those in food distribution, women constitute 85 per cent. Women are, therefore, principal players in Ghana’s agricultural sector which remains the leading economic sector, contributing about 32 per cent of Gross Domestic Product (GDP). Indeed, Ghanaian women do most of the planting, weeding, harvesting and transporting of food produce and are also dominant in food crop farming while most farming households in Ghana are also engaged in the processing of food such as maize, cassava, groundnuts and fish – in which women are also dominant.

- Women and their Participation in Ghana Agriculture

(IFAD, 1998, website) evaluation of the “Upper-East Region Land Conservation and Smallholder Rehabilitation Project (LACOSREP)” recognizes that in Ghana, as in much of the rest of the
world, women are increasing their contribution to household food security. Household food insecurity is a seasonal problem in some parts of Ghana, such as the north, occurring every year between February and July. In agriculture, women pitch in wherever and whenever they can. (Amu Nora Judith, website) Women usually conduct income-generating activities of one kind or another during the slower periods in agriculture. The large majority of these are traditional, low-capital input and labour-intensive activities. They cover a fairly typical range, including charcoal-selling, household-based food processing, crafts such as basket-weaving and petty trading among others. Women switch from one activity to another according to what is most likely to be profitable at a given time. Women with childcare or other heavy domestic obligations (such as the care of the sick or elderly) may select a less profitable off-farm productive activity in order to combine domestic and productive responsibilities. The income women generate from their operations may be small, but it plays a significant role in meeting family food needs. This is particularly the case when a harvest is poor. Women also buy clothing for babies and children and often pay for school fees and health care. In carrying out these micro and small-scale activities, women are hampered by lack of time, lack of literacy skills and poor marketing opportunities. In recent years, more women are also entering seasonal or long-term migration to earn income. This used to be a matter of shame, but attitudes about it have now changed. Not only does migration take pressure off the family food supply, but it also results in occasional remittances (IFAD, 1998, website).

- **Education Enables Women to Assert and Defend their Land Rights**

(Kwapong, O.2008) This study looked at the issue of land and its effect on women, migrants, youth and the urban poor in Ghana. Factors such as high levels of illiteracy and ignorance of the law, high cost of enforcement of the law, interference by extended family, fear of extended family and limitations in respect of access to justice impedes women’s control over land. So, it was emphasized that in addition to putting in systems to support the most affected in land issues, adult education is crucial for improving the land situation of the marginalized in society. (Qui-sumbing and Otsuka, 2001) is also of the same opinion and suggested that it will enable them to assert and defend their rights. (Wily and Hammond, 2001) observe that insecurity of tenure affects not only economic poor but also those who assess land belonging to others: tenants, share croppers, youth and women.
Transfer of Land to Women Depends Upon the Female Labour Demand for Weeding

(Quisumbing Agnes R. et. al., 2004) On the issue of women and land in Ghana’s Western Region, the study has revealed that land allocation is a predominantly male affair. Women, who are divorced, widowed, separated, or have no male children with their husbands appear the worst hit in terms of access to agricultural land resources. Family and marital relationships provides access to land to women. Gifts and inheritance (in the absence of a male heir) is also creating opportunities for women’s ownership of land. On the possibility of women owning or accessing lands through gifts, (Quisumbing Agnes R. et. al., 2004) emphasize that women’s land rights have been strengthened rather than weakened over the time. Gifts are allowed by the extended family only if wives and children help the husband establish cocoa fields which require a lot of female labour for weeding. The increasing transfer of land to wives and daughters is consistent with the increasing demand for female labour as land use intensifies. But in cases where women’s labour is less important for cash cropping, individualization might still decrease women’s control over land (as argued by other writers on women’s land rights in Sub-Saharan Africa, e.g., Lastarria-Cornhiel, 1997).

2.2 Females in Decision Making in Farming

2.2.1 Asia

2.2.1.1 India

The Major Decision Makers in Agricultural Activities are Men

The extent of participation in the decision-making activities in household and agriculture related and other socio-culture affairs reflects the status of women in the family as well as in society. The major decision makers in agricultural activities are men even though women perform 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, women spend 14 hours a day working in and outside the home. During harvesting season she spends about 16 hours a day (Chaudhary Sarmishta, 2004).

In decision making regarding selection of crop for the season, procurement and sowing seeds of new varieties, breeds of animals, selling of fodder, milk and animals and procurement of fertilizers, the senior most males of the family are involved. Women were found to bring information
regarding new technologies from aanganwadis and self-help groups (SHGs) but for the adoption of new technologies, the final decisions were taken by male members of the family. This may also be because of the low risk bearing capacity of farmers in that region due to droughts and low soil fertility (Mishra Seema, et al. 2008).

Sethi (1991) also confirms the poor participation of women in agriculture sector in Himachal Pradesh, where women’s opinion is normally 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 party of decision making in gender relations.

Majority of the women in Manipur are the bread earners of their families, many of them the only bread earners. Being main earners, women had no time even to concentrate on their own plight. It was found that Manipur is economically far below on the ladder. There is no major industry. Agriculture is at subsistence level. There is land scarcity due to tremendous rise in the population. The social neglect of women and daughters is a matter of concern. They are subjected to heavy work both within and outside the home from an early age. They are less likely to receive medical help when they are sick. In the hills, much of the work is done by women and there is “iron like grip” rigidity in the division of labour. They work quietly and are invisible in any decision making bodies (Brara, N. Vijaylakshmi 2006).

Vaish, S. (1999) The different parameters in decision making of ladies were studied and the result showed that the main constraints in taking decisions about rice production technology were a lack of technical know-how (100%); lack of education in women (92%), men thinking that they know better (72%), the dominance of men in agriculture (69%) and opportunities not provided by men (59%). Sharma, (1992) also holds the similar views on the constraints faced by women in farming sector.

- Role in Decision-Making Increased with the Implementation of Interventions

The impact of interventions on women in a project being implemented in rural areas of District Pauri, Nainital and Udhamsingh Nagar in Uttarakhand, found increased role of “women as a group” in solving community problems by their ‘shramdan’. Participation in Panchayati Raj institutions and their role in decision-making had also increased. Study suggests that the State could
capitalize on project interventions in agriculture and horticulture by developing a brand name for Micro enterprise products of SHGs from Uttaranchal (Joshi, Meenakshi 2004).

- **Tribal Women have More Say in Family Decisions**

While tribal women have more say in family decisions than their non-tribal counterparts, they also share more responsibilities (Awais Mohammad et. al.2009). Preparing food and providing for drinking water is solely their responsibility so they operate closely with the forests from where they get water, fuel and minor products including edible fruits, tubers, flowers, vegetables and berries.

- **Political Empowerment and Decision Making**

The 73rd and 74th Amendments (1993) to the Indian Constitution have served as a breakthrough towards ensuring equal access and increased participation in political power structure for women, laying a strong foundation for their participation in decision making at the local levels. The (Panchayati Raj Institutions) PRIs plays a central role in the process of enhancing women’s participation in public life. The PRIs and the local self-Governments should be actively involved in the implementation and execution of the National Policy for Women at the grassroots level.

Following case study shows that women were benefited by political empowerment.

The case study of (Mittal, Priyanka Mukherjee, 2010, website) found that in distant villages of Orissa in India, a small army of women took up the cudgels of advocacy to bring about changes in their lives. It happened only through the active intervention of Dan Church Aid’s partner Nari Suraksha Samiti (NSS). To empower women and build their agencies, NSS is committed to its objective to train and create leadership of women enabling them to participate on the path of development. Pramila Pradhan, Bharati Behera and Tunni Sahu are all ward members (representatives of the local self-government) in the Angul district of Orissa in Eastern India. They are women who have stepped out of their households and home bound duties to work for the larger causes of their villages, families and women.

The ladies also felt proud in sharing the views that after forming a federation of women and strengthening themselves, they are in a position to raise their voices and to do a number of activities which they wanting to do earlier and to solve a number of issues specific to woman which were never raised and the opinion never sought.
The ladies shared their experience of problems faced in delegating their duty as decision maker like stray comments from some male members, half-heartedly support from the family members etc. But without caring much about these hurdles they moved ahead and slowly started getting the support of everybody when people realized that the ladies under their leadership have got the passion and will power to do something good for everybody.

2.2.1.2 Nepal

- Nepalese Women Play a Significant Role in Decision Making

As far as participation of women in Asian countries is concerned it is found that in Nepal, in addition to routine domestic work, women play a significant if not a predominant role in agriculture production. One participatory research project found that women work more as participants and decision makers, share the responsibility of planting, transplanting, weeding, harvesting, carrying grains to the mill for grinding, including collecting wood, water and fodder (Axinn, 1977), in agriculture than men in the high mountain areas, equal to or more than men in the middle hills and slightly less than men in the terai region (Sontheimer et. al. 1997). Women, alone or together with men, both as participants and decision makers, share the responsibility of planting, transplanting, weeding, harvesting, carrying grains to the mill for grinding, including collecting wood, water and fodder (Axinn, 1977). (Timsina Dibya, et. al., 1989) also holds the similar views.

Perceptions and priorities of women do not depend upon age, castes or education alone. They are rather inter dependent and also influenced by several other –external– factors, such as the access of women to extension services, exposure to short-term training, individual or extra cash income (e.g., from the sale of vegetables). The practical knowledge of older women, complemented by the more science-based knowledge of the younger more formally educated women, can also contribute to better use of the limited available land resources. Women in villages that are more easily accessible have generally a better understanding of modern technologies. These women also have better access to markets for better cash income, which -in turn- gives them more influence on farming decisions (Aryal S. S. et. al., 2004).

2.3 Access of Rural Women to Productive Resources in Farming

- Theoretical Focus

Access is the right or opportunity to use, manage or control a particular resource (Nichols et al. 1999). Resources may be economic (e.g. Land and credit), political (e.g. Participation in local
government and community decision-making) and social (e.g. education and training).

The process, when disadvantaged women have the ability to control their own environment by gaining greater access to material and intellectual resources, (Musokotwane et al. 2001) called this process as ‘empowerment’.

Many studies (IFPRI, 2000; Grace, 2005; Pitt et al., 2006) have already found that access to productive resources for women enhances knowledge on farm management and income generation, develops bargaining and decision-making power, improves children’s schooling and health, increases self-confidence and social networks and provides security in old age.

Poverty alleviation in rural areas is significantly related to women’s increased access to productive resources (Adereti, 2005). Thus, efforts to build social capital among rural women are necessary for sustainable production and household food security through provision of facilitating resources (Meludu et al., 1999; Flora, 2001). At the same time, raising social awareness of people about the symptoms, causes and consequences of oppressive economic, cultural, familial, religious and legal practices is necessary for changing traditional gender roles and mindsets (Acharya, 2003).

2.3.1 Asia

2.3.1.1 India

2.3.1.1.1 Education - Social Empowerment of Women*

Social change simply means a change in people, in their relationships with each other and with the things in their environment. Uncontrolled social change can get us into serious trouble. So, it is very important to take steps that will bring a positive change in it. As external force is required to bring a body from the state of rest to motion, but, it should be controlled one to move it in the guided direction. Education is a strong and useful external weapon to make an effective social change to break the inertia in this regard.

Education is widely accepted as a leading instrument for promoting economic growth. For India, here growth is essential if the country is to climb out of poverty, education is particularly important. Education without doubt, is the most fundamental prerequisite for empowering women in all spheres of society. Studies show that when women are supported and empowered with

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*“Education Status of Farming Females – A Study of Rural Area of Sikkim in North- Eastern India”
all of society benefits, their families are healthier, more children go to school, agricultural productivity improves and incomes increase. In short, communities become more resilient. However, without education of comparable quality and content to that given to sons and men, women are unable to understand the problem in the right perspective, excel in any field and advance within them. So, equal access to education for women and daughters should be dealt on priority basis. Special measures should be taken to eliminate discrimination, universalize education, eradicate illiteracy, create a gender-sensitive educational system, increase enrolment and retention rates of daughters and improve the quality of education to facilitate life-long learning as well as development of occupation/vocation/technical skills by women. Reducing the gender gap in secondary and higher education should be a focus area.

In India, the female literacy rate is lower than the male literacy rate, though it is gradually rising (Singh, S. 2007). Compared to sons, far fewer daughters are enrolled in the schools, and many of them drop out due to poor sanitation facilities in the school (Kalyani and Kumar 2001, Wikipedia). According to the National Sample Survey Data of 1997, only the states of Kerala and Mizoram have approached universal female literacy rates. According to majority of the scholars, the major factor behind the improved social and economic status of women in Kerala is literacy (Kalyani and Kumar 2001, Wikipedia). In urban India, daughters are nearly at par with the sons in terms of education. However, in rural India daughters continue to be less educated than the sons. A study by the USAID has found that countless women in the developing world are removed from the information age because of their lower levels of education and negative attitudes towards other forms of achievement. “Without access to information technology, an understanding of its significance and the ability to use it for social and economic gain, women in the developing world will get further marginalized from the mainstream of their communities, their countries and the world” (USAID, 2001).

2.3.1.1.2 Extension Service

Men and women have been growing crops and raising livestock for approximately 10,000 years. Throughout this period, farmers have continually adapted their technologies, assessed the results, and shared what they have learned with other members of the community. Though the exact time the first extension activities took place is not known, but, it is a well-known fact that at least 2,000 years ago, Chinese officials were found creating agricultural policies, documenting practical knowledge, and disseminating advice to farmers (Trager, J. 1996).
The birth of the modern extension service has been attributed to events that took place in Ireland in the middle of the 19th century. Between 1845–51 (Jones, G.E. and Garforth, C. 1997) the Irish potato crop was destroyed by fungal diseases and a severe famine occurred known as Great Irish Famine. The British Government arranged for "practical instructors" to travel to rural areas and teach small farmer how to cultivate alternative crops. This scheme attracted the attention of government officials in Germany, who organized their own system of traveling instructors. It has been experienced ever since that training acted as forefront exercise meant for providing extra knowledge, skill and attitude to the trainees. This finally became the main force behind strengthening of extension support in any development scheme or project. Any scheme is thus incomplete if Training and Extension work is not incorporated in it.

Dissemination of new technology through extension workers to the ultimate users is very important, so that they can adopt these scientific practices of crop cultivation in their farms. A large amount of support is provided by International development organizations such as the World Bank and the Food and Agriculture Organization (FAO) of the United Nations to agricultural extension in the developing countries.

A productive agricultural economy relies upon a well prepared agricultural workforce (Samy, 2003) and sound and healthy livestock capital base. These are of potential importance not only to the farmers, but also to animal welfare, public health and food supply. So, extension programme/information/sources to educate the farmers, related to animal health to ensure the continued productivity of livestock is of potential importance (Jensen, English, and Menard, 2009).

The irony of the fact is that women are not perceived as ‘farmers’ even when they do most of the farm work. As a result, agricultural extension and information on new technologies are almost exclusively directed to men, even when women are increasingly responsible for farm work (Kelkar 2011). Women may be aware of local resources as well as constraints in marketing, but their awareness is poor about new developments like improved dry land farming techniques and varieties suitable for unfavourable soil and moisture conditions. This is probably due to lack of communication and virtual absence of extension programmes, which would directly benefit women.
2.3.1.1.3 Self Help Groups (SHG)*

Self-help groups are started by non-profit organizations (NGOs) that generally have broad anti-poverty agendas. Self-help groups are seen as instruments for a variety of goals including empowering women, developing leadership abilities among poor people, increasing school enrolments, and improving nutrition and the use of birth control.

Self-Help Group typically comprises a group of rural poor having homogenous social and economic backgrounds (so that they can freely interact with each other with in the group); all voluntarily coming together to save regular small sums of money, mutually agreeing to contribute to a common fund and to meet their emergency needs on the basis of mutual help. By poor one should be guided by the living conditions and this has nothing to do with poverty line. People living above poverty line (APL) can also form SHG like BPL. Members should be between the age group of 21-60 years. It may be registered or unregistered.

Members make small regular savings contributions over a few months until there is enough capital in the group to begin lending. Funds may then be lent back to the members or to others in the village for any purpose. By doing this they learn financial discipline through savings and internal lending which proves to be very helpful when they use bank loans.

In the early 1980s, the Government of India (GoI) launched the Integrated Rural Development Programme (IRDP), a large poverty alleviation credit program, which provided government subsidized credit through banks to the poor. It was aimed that the poor would be able to use the inexpensive credit to finance themselves over the poverty line.

Also during this time, NABARD conducted a series of research studies independently and in association with MYRADA, a leading non-governmental organization (NGO) from Southern India,

**“The Membership Status of Farming Females – A Study of Rural Area of Sikkim in North Eastern India”
which showed that despite having a wide network of rural bank branches servicing the rural poor, a very large number of the poorest of the poor continued to remain outside the fold of the formal banking system. It also appeared that what the poor really needed was better access to these services and products, rather than cheap subsidized credit. Against this background, a need was felt for alternative system of credit, which would fulfil the requirements of the poorest, especially of the women members of such households. The emphasis therefore was on improving the access of the poor to microfinance rather than just micro-credit.

To answer the need for microfinance from the poor, the past 25 years has seen a variety of microfinance programs promoted by the government and NGOs. In 1999, the GoI merged various credit programs together, refined them and launched a new programme called Swaranjayanti Gram Swarazagar Yojana (SGSY). The mandate of SGSY is to continue to provide subsidized credit to the poor through the banking sector to generate self-employment through a self-help group approach and the program has grown to an enormous size.

- **SHG Bank Linkage**

Microfinance programmes like the Self-Help Bank Linkage Programme (SHG) in India have been increasingly hailed for their positive economic impact and the empowerment women. This is based on the view that women are more likely to be credit constrained.

A most notable milestone in the SHG movement was when NABARD launched the pilot phase of the SHG Bank Linkage programme in February 1992 and around 500 SHGs were linked with branches of half a dozen banks across the country. This was the first instance of mature SHGs that were directly financed by a commercial bank. The core of SHG bank linkage in India has been built around an important aspect of human nature-the feeling of self-worth.

The linking of SHGs with the financial sector was good for both sides. The banks were able to tap into a large market, namely the low-income households and the SHGs were able to scale up their operations with more financing and they had access to more credit products. In addition to the financial aspect of SHGs, the non-financial areas such as social security and gender dynamics are also affected by such movement.

- **Self-Help Groups in Sikkim**

In India, many SHGs are 'linked' to banks for the delivery of microcredit. As on 31 March 2009,
a cumulative number of 42.24 lakh SHGs have been assisted by various banks. But, this response is not as good in Sikkim. As on 31 March 2010, out of 2817 SHGs, only 848 groups have been credit linked in the state.

It has been experienced that the success of SHG linkage programme depends to a large extent upon the presence of good NGOs. Unfortunately, good NGOs are not very much present here in Sikkim thereby hindering the linkage process. However, to a large extent this problem has been met by the presence of local youth group, local women group and cooperative societies. The Rural Management and Development Department is also making an endeavour to promote more number of SHGs and their savings be linked with various branches of commercial banks.

Rural poverty and indebtedness are the causes of underdevelopment in rural areas. Lack of equal opportunity and gender bias has rendered rural women vulnerable in their social life and self-development. So, in order to improve their socio-economic condition, women are to be organized and suitable economic activities are to be provided to them under farm, non-farm, business and service sector. Some economists argue that true women empowerment takes place when women challenge the existing norms and culture, to effectively improve their well-being. Keeping these things in view, 33.33% of the target is reserved for women in different Government sponsored programmes, which is monitored periodically. In Sikkim there is vast potential for providing assistance to women under activities like- dairy, goatery, piggery, poultry, mushroom cultivation, bee-keeping, horticulture, agro processing, vegetable cultivation. Under PMEGP, SGSY, KVIC/KVIB programmes, special preference is given to women borrowers in order to improve their socio economic condition.

• **NGO’S Proved Successful in Inculcating the Credit Responsibility in Women**

In India, despite government policy directing various credit agencies to give preference to women in extending credit to the poor, women have not benefited. Non-governmental organizations (NGOs) are important intermediaries which help women gain access to credit and understand financial transactions.

(Singh Y K, 2007) Self-Help Groups (SHGs) have emerged in order to help poor women to secure inputs like credit and other services. The concept of SHG in India was introduced in 1985. Self-Help Groups are small, economical, homogeneous, affinity groups of rural poor who are voluntarily ready to contribute to a common fund to be lent to their members as per the group
decision. Many rural development programmes like 'Swarn Jayanti Gram Swarozgar Yozana' (SGSY) which is a combination of six rural development programmes, are based on the self-help group strategy. It is a viable alternative to achieve the objectives of rural development and to get women’s participation in all rural development programmes. A greater percentage of women were impacted positively by being members of SHGs. Women’s participation in SHGs enabled them to discover inner strength, gain self-confidence, social and economic upliftment.

(Viswanath Vanita, 1989) The assessment of the work of two NGOs in South India: Institute of Development Studies (IDS) and Grama Vikas shows that the Grama Vikas model is more effective because Grama Vikas' collective programs implemented by the women provide them with practical experience in the management of credit and help them understand financial responsibility. IDS brokers loans for the women from commercial banks and rely on group discussions among women about credit use to inculcate responsibility in them.

(Chandel et. al., 2008) In Uttar Pradesh, more than half of the farmers are women but their participation in departmental training and extension programmes is very limited. Only a few women have been recognized as progressive farmers. The knowledge and skill of women needs to be incorporated into the development of modern farm technologies by scientists. The blending of farm women’s indigenous wisdom with modern technologies is also important.

- **Some of the Successful Stories of Vedanta’s (SHG)**

(Thapar Ruby, 2010) Vedanta’s Self Help Group (SHG) program aims at empowering women through financial independence. The main thrust of the economic activities is to enhance income from existing resources and create additional opportunities of employment to optimize local resources and skill. These SHG’s have been engaged in enterprises like mushroom cultivation, poultry, goatery, puffed rice processing, vermicomposting, leaf plate making, pisciculture and others. Empowering women in this manner not only make them an active member within their households but also helps in the development of their villages. Below are given some of the successful stories of Vedanta’s (SHG).

In Kalahandi district, the Jeebika Project was launched in collaboration with Shakti, a local NGO, who trained the women on leaf plate stitching. The SHG are organized into SHG Cluster, wherein the whole project area has been divided into 4 clusters on basis of geographic distribution. Each SHG of a village comes under the village level cluster and all village level clusters come
under geographic cluster an apex body. Role of the cluster is for backward and forward linkages with market accessibility and bargain power. It helped women in empowering them economically and also escalating their income by eliminating the middlemen.

At Bharat Aluminium Company Ltd. (BALCO), small efforts of the SHG group which was formed under the Watershed Development Project in Bhatgaon in Korba district helped in improving their lives as well as economic prosperity of the villagers which was marred by the home-made liquor.

At Hindustan Zinc Limited (HZL), with the capacity building of the members of SHGs in “Peda (Sweet) Making” and linkage of the SHGs with banks, they are able to cash on an opportunity to cater for the local area demand.

At The Madras Aluminium Company Ltd (MALCO), with the capacity building of the members of SHGs in stone embroidery work on sarees and plain cloth and also with their introduction to some textile shops in Erode and Salem, SHG women members became economically independent by marketing their local skill and by getting regular work.

SHG members of Sterlite Industries India Ltd. (SIIL), by getting training in the preparation of herbal hair oil changed their lives by engaging themselves in producing scented herbal oil and marketing their products at cultural festivals in temples and exhibitions.

SHG members of SESA GOA were provided with skill development training in multiple disciplines like making of vermicelli, notebooks & files, chilli pulverizing, masala powder making etc. under a project called ‘Micro Enterprises Promotion’ for women SHG members. The trained women soon made themselves economically independent by starting vermicelli production, masala powder making and bag making unit.

2.3.1.2 Nepal

- Social Norms and Customary Laws are a Barrier to Women's Equitable Access

In Asia, women’s access to inputs in farming in Nepal shows that despite women's important
role in agriculture, traditional social norms and customary laws which generally are biased in favour of men, are a barrier to women's equitable access to productive resources (Kumar and Hotchkiss, 1989).

(WB 2008) Caste and ethnicity-based discrimination constitute a barrier to access resources for women within many ethnic and low-caste groups. Although caste-based discrimination was abolished in 1963, over 200 forms of commonly practiced types of caste-based discrimination have been identified which include: limitation to socially-sanctioned roles; obligation to carry out demeaning tasks; and prohibition to access common water sources. Thus, the lack of access to and control over productive resources is the main factor limiting women’s equal participation in economic activities, thereby hampering the human development process (Acharya, 2003).

2.3.1.3 Bangladesh

- Various Socio-Cultural and Structural Barriers Affect their Access to Resources

Out of a total population of 149.7 million in Bangladesh, women constitute 74.4 million (PRB, 2005). The majority, who are mostly poor, vulnerable and marginalized, live in rural areas. They play an important role in seed production, animal husbandry, fisheries, post-harvest management, conservation of biological diversity, management of energy and family (Anon., 1995). Despite their tremendous contribution to food production and well-being for the household, rural women are underestimated and overlooked in development strategies. Various socio-cultural and structural barriers affect their access to formal and non-formal institutions and extension services (Murshid and Yasmeen, 2004). However, women’s property rights are highly constrained in Bangladesh, as it is governed by religious laws. Under the Muslim Law, a daughter inherits one-half the share of her brother, a wife receives only one-eighth of the deceased husband’s property while a mother gets one-sixth (ADB, 2001; Ramachandran, 2006). Due to lack of land ownership, women are getting inadequate attention by many development agencies. For example, the agricultural extension delivery services in Bangladesh are still concentrated on male farmers and consequently, fail to reach the majority of rural women with modern information and technologies. Access to resources is one of the elements of women’s empowerment and a base for the attainment of the Millennium Development Goals (MDGs).

The extent of accessibility of rural women from three villages of Mymensingh District in Bangladesh showed that the women had better opportunities for rearing livestock and availing capital.
However, their access to extension services, training, technologies, institutions, land and production inputs were limited. Lack of technical knowledge and land ownership, heavy household chores and some socio-cultural constraints like (restricted mobility and male resistance) hindered women’s access to productive resources (Parveen, Shahnaj 2008).

2.3.2 Africa

- Access to Productive Resources Shows Mixed Response

(Spring Anita, 1987) An examination of the gender division of labour of African women shows that so-called "traditional" patterns have given way to suitability with women involved in all aspects of production either routinely or when male labour is unavailable due to a change in marital status or to out-migration. The semi-autonomous nature of women within the household and the diverse types of households are detailed in order to show the diverse responsibilities of men and women for the procurement of food and other commodities. Although some women earn a good living from agriculture and can assure family food security and/or generate surplus sales, most women tend to be among the lower resource farmers. This is not because they are deficient in farming skills, but because they lack access to labour, land, credit, training, and mechanization, especially in years of agricultural intensification.

(World Bank, 2008I) “In Mozambique, agriculture is essential for economic growth, because the sector employs 80 percent of the labour force”. Staying in agriculture, while providing food security for the household, works out disadvantageous for women: it implies a lower productivity than in the non-agricultural sector and, what is more, it can be disempowering as men control the cash.

(Maarten van Klaveren et.al. 2009) The report shows that most of the Mozambican population still survives in subsistence agriculture. As men have dominated the movement of adults out of agriculture into wage and self-employment in non-agricultural sectors, the agricultural labour force is increasingly made up of women. Between 1996 and 2002-03 the share of all women in work employed in agriculture fell by over 6% points, but in 2002-03 it still concerned the overwhelming majority of nearly nine of ten women. Agriculture is female-intensive in Mozambique. In 2002-03, women constituted about 62% of the active agricultural labour force. Female-heads of households in rural areas are particularly constrained, both in time--mostly working very long hours per day--and in income sources. Between 1996 and 2002-03, commercial services—such as transport,
food preparation, finance, and telecommunication—saw their output grow slightly slower than GDP did, but employment in these services tripled.

(Davison Jean, 1987) The paper argues that while women of Mozambique (Africa) have generally benefited from the redistribution of land since independence, access to other resources and control over decision-making vary according to the type of development project in which women participate. Of the two projects discussed in this paper, women in the state-sponsored cooperative have better access to the group's resources and decision-making arenas than women in the bilaterally aided rice scheme.

(Roncoli Carla Maria, 1985) The examination of the position of women in traditional societies in Ghana with regard to their access to the means of productions and the changes brought about by the commoditization of the economy and the incorporation of such groups in the national society points out that the process of "development" has negatively influenced women's opportunities for economic improvement and self-determination, and terminates with a recent example of the impact of planned "development" on women as small-scale farmers.

Development stakeholders have come to realize that socio-economic and gender-disaggregated agricultural data are essential for the planning of effective responses to matters such as poverty, food insecurity and the HIV/AIDS pandemic. (Baden, 1997) identified some gender based differentiations within the household including access to productive resources, control over family labour, rigidities in division of labour, inequality in consumption and responsibility for domestic expenditure. (Tamale, 2004) argues that the non-recognition of women’s labour for domestic chores is reinforced by the unequal allocation of resources. (Amu Nora Judith, website) concludes that with no land as collateral and restricted access to formal credit, they have primarily relied on informal sources such as family, friends and traditional moneylenders. These sources can have high interest rates, or they may not always have the funds available for making loans.

- Integration of Women is a Must in Farming Systems Research and Extension

(Spring Anita, 1987) Farming systems research and extension (FSR/E) methodology has several phases (pre-diagnostic, diagnostic, technology design, testing, and dissemination) that should include information about the sexual division of labour, resource allocation, income generation, and knowledge of farming practices; yet gender is often left out of FSR/E by both researchers and extensionists. FSR/E practitioners usually rely on extensionists to locate, interview, and select
trial cooperators. The extension staff members, who tend to be predominantly men, target male farmers for these and other extension activities. Therefore, there are very few women extensionists — women who are not trained who are concentrated in the lower ranks, and who tend to be assigned to home economics rather than to agricultural programs. A case study from Malawi shows that it was uncommon for women to be included in FSR/E work as trial farmers or in recommendation domains.

Considering this complex situation, the researcher has attempted to examine some of the productive resources accessible to rural women and explored enabling and limiting factors, with the intention of making them powerful agents for change over time.

### 2.4 Agriculture and Allied Sector

Agriculture is the mainstay of the Indian economy because of its high share in employment and livelihood creation. It supports more than half a billion people providing employment to 52 per cent of the workforce. Its contribution to the nation's GDP is about 18.5 per cent in 2006-07. It is also an important source of raw material and demand for many industrial products, particularly fertilizers, pesticides, agricultural implements and a variety of consumer goods. Agriculture and allied industry is further divided into several segments, namely - horticulture and its allied sectors (including fruits and vegetables, flowers, plantation crops, spices, aromatic and medicinal plants); fisheries sector; animal husbandry and livestock; and sericulture. India's varied agro-climatic conditions are highly favourable for the growth of large number of horticultural crops, which occupy around 10 per cent of gross cropped area of the country producing 160.75 million tons.

Department of Agriculture and Cooperation under the Ministry of Agriculture is organized into 24 divisions and a 'Technology Mission on Oilseeds, Pulses and Maize'. It has 4 attached offices; 21 subordinate offices; 2 public sector undertakings; 7 autonomous bodies; and 11 national-level cooperative organizations under its administrative control. In addition, two authorities, namely, the 'Protection of Plant Varieties and Farmers Rights Authority' and the 'National Rain-fed Area Authority' have been set up. Besides, the Department essentially supplements and complements the efforts being made by the state governments to promote agricultural production and productivity.

Agriculture being a State subject, it is the responsibility of the State Governments to ensure
growth and development of the sector within their respective State. Accordingly, separate departments have been set up in several States.

Several significant initiatives have been taken in recent years by the Government in order to reverse the downward trend in agricultural production. They are Rashtriya Krishi Vikas Yojana (RKVY); National Policy for Farmers 2007, the primary focus of this policy is on ‘farmer’ defined holistically and not merely on agriculture. In that sense, it is much more comprehensive than an Agriculture Policy. The objective is, inter alia, to improve the economic viability of farming through substantially improving net income of farmers. Needless to say, there is emphasis on increased productivity, profitability, institutional support, and improvement of land, water and support services apart from provisions of appropriate price policy, risk mitigation measures and so on., Expansion of Institutional Credit to Farmers, National Rural Health Mission, National Food Security Mission, Rashtriya Krishi Vikas Yojana to incentivize the states to invest more in agriculture, Integrated Food Law, Legislative Framework for Warehousing Development and Regulation, Protection of Plant Varieties and Farmers' Rights (PPVFR) Act, 2001, National Bamboo Mission, etc.

The rapid growth of agriculture is essential not only for self-reliance but also for meeting the food and nutritional security of the people, to bring about equitable distribution of income and wealth in rural areas as well as to reduce poverty and improve the quality of life. Growth in agriculture has a maximum cascading impact on other sectors, leading to the spread of benefits over the entire economy and the largest segment of population.

2.4.1 Fisheries

There exists several investment opportunities in the sector for the entrepreneurs world over. But, there are several challenges and issues facing the fisheries development in the country, such as, accurate data on assessment of fishery resources and their potential in terms of fish production; development of sustainable technologies for fin and shell fish culture; yield optimization; harvest and post-harvest operations; landing and berthing facilities for fishing vessels and welfare of fishermen; etc.

In the high altitude areas with snow-fed rivers, there is perhaps ample scope of culture of fishes like Brown and Rainbow trout, Scale and Mirror carps, Leather carps etc. Due to extensive network of rivers in the Himalayan mountain region, there is a tremendous potential for pisciculture.
There are several examples of successful fish culture in plains, but hill and mountain areas are still lacking in this sphere. Non-availability of flat land, fish seeds, appropriate technology, training and marketing are some of the obstacles in the way of commercial fishery in the hill regions. Therefore, culture fishery is not well developed in these areas and people depend on capture fishery. In Sikkim, an extensive enterprise for fish culture does not exist except for some stray fish farms being developed.

2.4.2 Sericulture*

Silk is a way of life in India. Over thousands of years, it has become an inseparable part of Indian culture and tradition. No ritual is complete without silk being used as a wear in some form or the other and is also called as The Queen of Textiles. It is characterized by exquisite qualities like the natural sheen, inherent affinity for dyes, vibrant colours, high absorbance, light weight, resilience and excellent drape, etc. Sericulture and Silk Textiles Industry is one of the major sub-sectors comprising the textiles sector. Sericulture is an agro-based cottage industry. Sericulture refers to the mass-scale rearing of silk producing organisms in order to obtain silk. Sericulture is an agro-based labour intensive industry. The major activities involved in a sericulture industry are:

a) Cultivation of silkworm food plants
b) Rearing of silkworms for the production of raw silk
c) Reeling the cocoons for unwinding the silk filament and
d) Other post-cocoon processes such as twisting, dyeing, weaving, printing and finishing.

Sericulture is one of the most labour intensive sectors, combining activities of both agriculture (sericulture) and industry. India is ranked as the second major raw silk producer in the world. It is this position along with its immense employment potential that makes sericulture and silk, indispensable in the Indian textile map.

Sericulture is one of the rural based agro industries with global reach. While providing sustainable income and employment opportunities to the rural poor who are the main practitioners, silk production activity fetches annual export earnings of more than US$600 million (http://www.seri.ap.gov.in/poten_part_women_seri.pdf). Some unique features of the silk sector are its rural nature, agro based, ecologically and economically sustainable activity for the poor, small and marginal farmers, agriculture labour and women in particular. Many studies indicated that 60% of the activities in the pre-cocoon and post-cocoon sectors are carried out by women.

2.4.2.1 Women in Sericulture

Sericulture is a small scale industry which is an important entrepreneur for rural families. The role of women as agricultural labourers in mulberry cultivation is important because mulberry garden requires labour from the beginning for pruning, weeding, application of farm yard manure, fertilizers and other jobs. An acre of land optimally requires 10 labourers out of which 7 would be women (Rani Usha J., 2007). The main work involves plucking of leaves for feeding the silkworms. At the rearing houses the activities that are performed by women are as follows:

a) Cleaning the rearing house, before the silkworm are raised.
b) Getting the trays ready for further extension of bed.
c) Feeding the worms after the 3rd instar which has to be done 4-5 times per day.
d) Changing the bed in each of the trays. (At least 56-60 trays will be there, by the time they reach the 5th instar)
e) Placing the worms in the mount ages i.e. around 120 of them.
f) Harvesting the cocoon.
g) Cleaning the cocoon and removal of floss grading.
h) Marketing of cocoon though very few women takes up this job, as it takes time in the market.

When the crop of rearing is over, women have to clean and get the trays smeared with cow dung and get ready for the next rearing. (Chelladundi, 1999) in his study on ‘Employment generation in Sericulture’ concluded that sericulture provides two types of employment:-

a) Direct – mulberry cultivation and cocoon rearing
b) Indirect –Reeling, twisting, warping, dyeing and weaving.

The role of sericulture in generating employment and income is discussed in a very clear-cut manner. The criterion of employment and income in silk reeling units is also dealt with Radha (Krishna et al. 2000) in their study on ‘Silk and Milk- an economic package for rural upliftment’ explained that an acre of irrigated mulberry generates as much as one lakh rupees per year through transaction of cocoons and provide full employment to a minimum of 5 men throughout the year. Silk is a high value but low volume product accounting for only 0.2 % of world's total textile production. It churns out value added products of economic importance.
2.4.2.2 Types of Silk

India holds the monopoly on producing the Muga silk. It is the only one cash crop in agriculture sector that gives returns within 30 days. Sericulture emerged as an important economic activity, becoming increasingly popular in several parts of the country, because of its short gestation period, quick recycling of resources. It suits very well to all types of farmers and exceptionally for marginal and small land holders as it offers rich opportunities for enhancement of income and creates own family employment round the year (http://business.gov.in/agriculture/current_scenario_sericulture.php).

There are five major types of silk of commercial importance, obtained from different species of silkworms. The five varieties of silk may be divided into two broad categories:-

i.) Mulberry Silk
ii.) Vanya Silk or Non-Mulberry Silk (all other varieties of silk fall in this category)

i.) Mulberry Silk

It comes from the silkworm, Bombyx mori L. which solely feeds on the leaves of mulberry plant. The bulk of the commercial silk produced in the world comes from this variety. In India, the major mulberry silk producing States are Karnataka, Andhra Pradesh, West Bengal, Tamil Nadu and Jammu and Kashmir which together accounts for 92 % of country's total mulberry raw silk production.

• Climate

Mulberry can be grown up to 800 m MSL. For the optimum growth of mulberry and good sprouting of the buds, the mean atmospheric temperature should be in the range of 13° C to 37.7° C. The ideal temperature should be between 24 and 28° C with relative humidity of 65 to 80 percent and sunshine duration of 5 to 12 hours per day. Mulberry can be grown in a rainfall range of 600mm to 2500mm. Under low rainfall conditions, the growth is limited and requires supplemental irrigation. On an average, 50mm once in 10 days is considered ideal for mulberry.

• Soil

Slightly acidic soils (6.2 to 6.8 Phosphorus) free from injurious salts are ideal for good growth of
mulberry plant. Saline and alkaline soils are not preferred.

ii.) Temperate Tasar Silk:

It is generated by the silkworm, Antheraea mylitta which mainly thrive on the food plants Asan and Arjun. Tasar (Tussah) is a copperish colour, coarse silk mainly used for furnishings and interiors. In India, the major tasar silk producing States are Jharkhand, Chhattisgarh and Orissa, Maharashtra, West Bengal and Andhra Pradesh.

a) Tropical Tasar silk or Oak Tasar Silk:

It is a finer variety of tasar generated by the silkworm, Antheraea proyeli J. which feeds on natural food plants of oak. In India, it is mainly produced in the sub-Himalayan belt of India covering the States of Manipur, Himachal Pradesh, Uttar Pradesh, Assam, Meghalaya and Jammu and Kashmir.

b) Muga Silk:

It is a golden yellow colour silk obtained from semi-domesticated multivoltine silkworm, Antheraea assamensis. These silkworms feed on the aromatic leaves of Som and Soalu plants. Muga Silk is the pride of Assam and is an integral part of the tradition and culture of the State.

c) Eri Silk (or Endi or Errandi):

It is the product of a domesticated silkworm, Philosamia ricini that feeds mainly on castor leaves. It is a multivoltine silk spun from open-ended cocoons, unlike other varieties of silk. In India, this culture is practiced mainly in the North-Eastern States including Assam. It is also found in Bihar, West Bengal and Orissa. Erculture is a household activity practiced mainly for protein rich pupae, a delicacy for the tribal. Resultantly, the eri cocoons are open-mouthed and are spun. The silk is used indigenously for preparation of chaddars (wraps) for own use by these tribals.

Geographically, Asia is the main producer of silk in the world and produces over 95 % of the total global output. But, bulk of it is produced in China, India, Japan, Brazil and Korea. India is ranked as the second major raw silk producer in the world. It contributes about 18% to the total world raw silk production.

Among the varieties of silk produced, mulberry silk accounts for 89.45%, followed by eri, tasar
and muga at 8.04%, 1.89 and 0.62%, respectively. About 40-45% of silk produced is from charka and about 40-45% is from cottage basins and the rest 10% silk is from multi-end reeling. It is this position along with its immense employment potential that makes sericulture and silk, indispensable in the Indian textile map. It is practiced in about 53,814 villages all over the country. It provides employment to about 6 million people, most of them being small and marginal farmers, or tiny and household industry mainly in rural areas. (http://business.gov.in/agriculture/state_departments_sericulture.php#top).

Sericulture is an eco-friendly agro-based labour intensive rural cottage industry providing subsidiary employment and supplementing the income of rural farmers especially the economically weaker section of the society. In the development of sericulture industry, the role of State Governments has customarily been the expansion of sericulture activity and provision of farmer level extension as well as other support services, including credit facilitation.

India being blessed with prevalence of favourable climatic conditions, mulberry is cultivated in almost all states. But, traditionally sericulture is practiced in Karnataka, Andhra Pradesh, Tamil Nadu, West Bengal and Jammu and Kashmir, which together accounts for 92 % of country's total mulberry raw silk production in the country. Muga is twined with the culture of Assam and has the monopoly. In the recent years, muga rearing is extended to other states like Mizoram, Arunachal Pradesh, Manipur, Uttarakhand, Andhra Pradesh, and West Bengal. Now, as a result of growing realization, sericulture is gaining ground in non-traditional areas too. Sericulture and Weaving in Meghalaya are the two most important cottage based, eco-friendly industries in the rural areas. The thrust area under sericulture sector is to boost up cocoon and silk production by development of systematic and economic plantation at sericultural farmers level so as to enhance the productivity per unit area. In-service training of technical personnel and training for the educated unemployed youth for self-employment are also provided. Andhra Pradesh produces all the four popular varieties of Silk worm cocoons namely Mulberry, Tasar, Eri and Muga. In Tamilnadu, the Handlooms, Handicrafts, Textiles and Khadi Department was formed in 1985. It is also concerned with the development of Sericulture in the State for the welfare of weavers / artisans. (http://business.gov.in/agriculture/policies_schemes_sericulture.php)

2.4.2.3 Policies and Schemes

There are several centrally sponsored schemes for promotion and development of sericulture sector, through which Government of India has been undertaking different activities like:
a) Creation of sericulture related infrastructure;
b) Development of nurseries and farms;
c) Expanding plantation areas;
d) Providing technical know-how to the rearers in production and marketing of cocoons;
e) Skill up-gradation and training programme, etc.

The Central Silk Board has been implementing the catalytic development programme for development of sericulture in collaboration with the State Governments and also through the cluster approach/SGSY programme of the Ministry of Rural Development.

It aims to promote adoption of improved technology practices in various activities like host plantation, seed production, rearing of silkworm, reeling and twisting, weaving, printing and dyeing for enhancement of production and productivity as well as upgradation of the quality of silk.

The basic objectives of the programme are technology absorption, investment generation, productivity improvement and employment generation. Supports is also given in the operations ranging from food plant cultivation to marketing of products in mulberry, tasar, eri, muga silk and producing quality cocoons and raw silk in the silk producing States. For this, financial assistance with the subsidy/assistance is also to be provided to the beneficiaries by both Silk Board and the concerned State Government.

Support and incentives are provided mainly to small and marginal farmers and small entrepreneurs, under both on-farm and off-farm activities, in mulberry and non-mulberry sectors. The Central Silk Board has been implementing various schemes/projects for the development of sericulture by monitoring the flow of funds. It also plays a pivotal role in advising the Government on matters related to the silk industry.

2.4.2.4 Some more valuable information in mulberry cultivation and sericulture-

These are some of the answers for the queries of the problems faced while carrying out sericulture with mulberry plantation in Pampore, which can prove to be very helpful, whosoever will be facing problem while carrying out such activity.

Tree plantation of mulberry is to be carried out in the month of July (rainy season). However,
under temperate conditions, it is done in the month of March and October. For mulberry plantation the soil should be slightly acidic (pH 6.2 to 6.8). Make bundle of 20 kilograms and preserve in vertical position as moisture loss in such position is minimum. Mulberry shoots are to be transported during cooler hours of the day. If they are to be transported to long distance and takes more than 30 minutes, they should be covered with wet gunny cloth, polythene sheet to reduce moisture loss from the leaf. However, for qualitative production of leaves the recommended package of practices, use of integrated nutrient management and integrated disease, insect and pest management is to be followed. So many intercrops can be grown with mulberry. The studies conducted at CSR and TI, Pampore have revealed that crops like saffron, peas, and beans can be cultivated as intercrop with mulberry without affecting the leaf quality and yield. The different high yielding mulberry varieties that can be grown as tree under Kashmir conditions are Goshoerami, KNG and TR-10 to get quality foliage besides high yield. The most preferable season for planting mulberry saplings in Kashmir is 1st week of March and October- November. Sericulture department of the state or its subunits in the particular area can be contacted. Serichlor’ is used to disinfect the rearing houses. However, as it is carried out by the Government agencies, farmers will have not to bother. The quantity of solution required for disinfection of rearing houses is @ 2.0 liters / sq. meter or 140 ml / sq. ft. the hygienic measures which are required to be followed during rearing are - avoid borrowing rearing appliances, do not use appliances without disinfections, restrict entry of persons into rearing house, persons entering the rearing house must disinfect feet and hands before entering, sprinkle 5% bleaching powder in slaked lime at the passage of entrance, wipe the floor after each bed cleaning. Bed disinfectants used for prevention of diseases are RKO, Resham Jyothi, Vijetha, Ankush etc. Vijetha as bed disinfectant was tested and was found to give best result over others. There should be cross ventilation as higher % of CO2 in the rearing house is injurious to health of larvae. Spinning larvae can be identified by these features - these larvae feed less, become soft, litter becomes light brown colored which can be crushed with fingers, skin becomes gradually transparent, crawl here and there in search of space for spinning, larvae tend to move to darker areas.(http://www.csb.gov.in/faq/csrti-pampore/)

In reality, it is an occupation by women and for women, because women form more than 60% of the workforce and 80% of silk is consumed by them. The nature of work involved in the sericulture industry such as harvesting of leaves, rearing of silkworm, spinning or reeling of silk yarn and weaving are carried out by women. Keeping in mind the major role played by the women in the industry, exhaustive training programmes have been organized for them. Till date, about 2500
farm women have been trained from different States like Karnataka, Andhra Pradesh, Tamil Nadu, Kerala and Maharashtra. Important disciplines which boosts the skill and income like Integrated Nutrient and Disease Management, Young Age silkworm Rearing, Composite Rearing, Integrated Pest and Disease Management, Silkworm Seed Production, Value Addition to By-products of Sericulture Industry and Drudgery reduction through ergonomically sound appliances are intensively covered during the training.

Due to continuous R and D output in sericulture, several technologies have been evolved and due to this, production cost of cocoon has been reduced considerably. Recently, with the enforcement of these new research findings both in mulberry cultivation and silkworm handling has become more economical, the silk industry is now being practiced as a main profession and as a major cash crop of the country in many States (http://business.gov.in/agriculture/future_prospects_sericulture.php).

2.4.2.5 Hindrances of Sericulture

The Indian sericulture industry is currently facing several problems which have restricted full utilization of its potential. Some of the major problems are given below.

- **Produce Good Quality Bivoltine Silk:**

  Indian silk yarn is of poor quality, which not only affects our competitiveness in the world market, but has also resulted in a preference for imported yarn in the domestic market. Though the Indian breeds have the potential to produce the good quality of bivoltine silk, the problem arises due to lack of:

  a) Sufficient thrust on the adoption of improved technologies;
  b) Strict disease control measures;
  c) Quality leaf due to insufficient inputs to mulberry garden;
  d) Appropriate montages;
  e) Grading system for cocoons;
  f) Quality-based pricing system as well as use of young age silkworms.

  Bivoltine yarn is sturdier and is used by the power loom industry. But only 5% of the silk produced in India is bivoltine because its production requires much more attention and resources. It also yields just two crops in a year, as against the yield of four to six crops by multi-voltine silk.
Even the farmers do not have any incentive to switch to bivoltine silk yarn production because the difference between the selling price of bivoltine and multivoltine silk is not much.

- **The Other Factors Responsible for it are:**
  
  a) Insufficient adoption and proliferation of technology packages developed through Research and Development efforts;
  b) No effort to increase the area under mulberry;
  c) Fragmented and ad hoc approach;
  d) Non-involvement of private partners in a big way in seed production; farming and reeling;
  e) Non-penetration of the schemes;
  f) Improper forward and backward linkages; and
  g) Dumping of cheap Chinese raw silk and fabric.

It is necessary to encourage farmers to move from production of multivoltine silk to bivoltine silk through proper incentives. At the same time it must be ensured that adequate amount of multivoltine is available for the handloom sector to continue production. Its production in the country continues to be unsteady and fluctuates from year to year. With its uniqueness, non-mulberry silk production in India has a great potential for value added exports.

- **Need for Quality Based Pricing:**

  Reeling sector is an input-dependent activity and its operations are influenced heavily by three factors, namely, cocoon quality, cocoon price, and cocoon supply. But due to absence of quality-based price fixation, there has been very little quality control.

  Given the fact that the scope for enhancing the production of silk in the country by expanding the cultivable area is limited, hence, vertical expansion through productivity increase by using advanced technology and skilled man-power is the only option. In fact, emergence of new sericulture technology has not only reduced the production risks (drudgery) but has also increased the potential cocoon yield/unit area, relative to the traditional technology.

2.4.3 **Floriculture**

Human cultivation and use of saffron has more than 3,500 year’s timeworn association. Saffron, a spice derived from the dried stigmas of the saffron crocus (Crocus sativus), has through history remained among the world's most costly substances. With its bitter taste, hay-like fragrance, and
slight metallic notes, the Apo carotenoid rich saffron has been used as a seasoning, fragrance, dye, and medicine. Saffron is a genetically monomorphic clone native to Southwest Asia; it was first cultivated in Greece. (http://en.wikipedia.org/wiki/History_of_saffron)

Saffron is cultivated in Pampore town of Pulwama district in the state of Jammu and Kashmir. Pampore is located at 34.02°N 74.93°E. It has an average elevation of 1,574 metres (5,164 feet). The town is situated on the eastern bank of Veth also known as Jehlum (in Urdu).

India's saffron consumption is estimated at 20 tons a year, half of which is met by Iran, Spain and China, world's major saffron producers. Kashmir is one of the only four producers of saffron in the world, barely consumes a fraction of what it produces. Most of its output goes to the plains with exports of just about 4,000 kg. Historically, Pampore has remained Kashmir's main saffron grower for over thousand years (The Economic Times, 2011, website).

Pampore derives its name from its erstwhile name which was called ‘Padma pore’ which meant ‘Land of Gold’ (Saffron). Saffron crocus is an autumn-flowering perennial plant. Experts said it grows best in friable, loose, low-density, well-watered and well-drained clay-calcareous soils with high organic content. The delicate saffron flowers begin to grow after the first rains and the blooming period is usually around mid-October, following which the flowers are harvested. Raised beds are traditionally used to promote good drainage, they said. According to experts, the saffron grown in Pampore is of the “best quality”. Saffron the spice, also called ‘Kesar’ and ‘Zaffran’ in Kashmir, has medicinal properties and is known to help cure mild Alzheimer’s disease, heart disease, gastrointestinal ailments and depression. It is sold for Rupees 85,000 per 85 grams in the domestic market, and offers livelihood to saffron farmers in five districts across the state. At an elevation of 5100 feet above sea level and sprawled all across the Eastern bank of the Jhelum River, Pampore has Mediterranean Maquis which is best suited for the cultivation of Saffron. Today, Saffron is used as a seasoning, colouring, aromatic and curative agent.

2.4.4 Apple Growing

The apple is a native of South Western Asia. During 1990s, the European settlers introduced apple in the two valleys of La-chen and La-chung in Sikkim. It is also cultivated in Yuksom area of North Sikkim (Government of Sikkim, Krishi Bhawan 1). It requires for two to three months cold temperature below 40°F. In India it is grown generally at an elevation of 1600-2300 metres (Government of Sikkim, Krishi Bhawan 2).
2.5 Traditional Knowledge in Plants, Agriculture/related activities and its Management/Practices by Female Farmers

Indigenous Knowledge (IK) can be broadly defined as the knowledge that an indigenous (local) community accumulates over generations of living in a particular environment. This definition covers all forms of knowledge – technologies, know-how skills, practices, plant knowledge and its use, and beliefs – that enable the community to achieve stable livelihoods in their environment. A number of terms are used interchangeably to refer to the concept of IK, including Traditional Knowledge (TK), Indigenous Technical Knowledge (ITK), Local Knowledge (LK) and Indigenous Knowledge System (IKS).

In 2001, Government of India, set up the Traditional Knowledge Digital Library (TKDL) as repository of 1200 formulations of various systems of medicine in India namely (AYUSH) Ayurveda, Yoga (1500 Yoga postures i.e. asana), Unani, Siddha and Homeopathy. Along with this Tibetan Medicine is also prevalent in the Himalayan Region translated into five languages — English, German, French, Spanish and Japanese (Know Instances, 2010 and TK). India has also signed agreements with the European Patent Office (EPO), United Kingdom Trademark and Patent Office (UKPTO) and the United States Patent and Trademark Office to reduce commercialization of traditional medicines by giving patent examiners at International Patent Offices access to the TKDL database for patent search and examinations purposes (India Partners, and CSIR 2010).

According to the World Health Organization (WHO), 80% of the population in developing countries relies on traditional medicine, mostly in the form of plant drugs for their health care needs. (Wambebe, 1990) and (Manandhar, 1980) also hold the similar view. Additionally, modern medicines contain plant derivatives to the extent of about 25%. The demand for these medicinal plants is increasing both in developing and the developed countries because the disease curative property of its derivatives are non-narcotic having no side effects. (Bhattarai, 1988 and Justice, 1981) reported that when modern health care fails, the patient frequently turns to use of indigenous health care. This is the reason behind dramatic increase in the exports of medicinal plants in the last decade. The ecosystems of the Himalayas, the Khasi and Mizo hills of northeastern India, the Vindhya and Satpura ranges of northern peninsular India, and the Western Ghats contain nearly 90 percent of the country's higher plant species and are therefore of special importance to traditional medicine. Although, a good proportion of species of medicinal plants do occur
throughout the country, peninsular Indian forests and the Western Ghats are highly significant with respect to varietal richness (Parrota, 2001). Himalayan Region is known as the home land of these plants. Some of them are found at very high altitude which generally cannot live elsewhere. Because of the development activities are taking place in the State, hundreds of species are now threatened with extinction. If these practices continuous, there is every possibility that whatsoever resource of them is available with us may get extinct, so, every effort should be done to conserve them. It is estimated that there are over 7800 medicinal drug manufacturing units in India, which consume about 2000 tons of herbs annually (Singh H.P., 2001).

Traditional knowledge encompasses the beliefs, knowledge, practices, innovations, arts, spirituality, and other forms of cultural experience and expression that belong to indigenous communities worldwide. In many cases, traditional knowledge has been orally passed for generations from person to person. Traditional knowledge can also reflect a community’s interests. Some communities depend on their traditional knowledge for survival. The rationale for protecting traditional knowledge centres on questions of fundamental justice and the ability to protect, preserve and control one’s cultural heritage. There is also the concomitant right to receive a fair return on what these communities have developed: many areas of traditional knowledge have potentially lucrative applications.

2.6 Challenges Faced by Women

- Health Problems Due to Drudgery Prone Agricultural Work

(NCW, 2004). This study was undertaken to assess the status of women who are involved in agriculture. The population of females increased from 117 million to 407 million between 1901 and 1991. A sectorial profile of the female work force indicated that more than 80% female workers are engaged in the agriculture sector in rural India. High percentage of independent participation of women (43%-81%) was observed in all homestead activities like cooking, cleaning, collection of fuel, fetching water, care of children, etc. Independent participation of women was found to be very marginal in major crop production (1%), post-harvest activity (2%), livestock management (6%), and entrepreneurial activities (0%). This indicated the involvement of men in skilled agricultural work, and limiting the role of women to drudgery prone, unskilled activities like weeding, transplanting, harvest cleaning, grading, etc. The drudgery involved in household and agricultural work is tremendous and leads to several health problems. It has been seen that the most common occupational health hazard of women is overwork.
No Recognition of Women’s Participation

(Kulkarni, 1983) It is unfortunate that because of centuries of inertia, ignorance and conservatism, the actual and potential role of women in society has been ignored, preventing them from making their rightful contribution to social progress. Even in the context of the “Green Revolution” which is considered a successful breakthrough in the “food sufficiency” campaign of India, there is no recognition or specific mention of women’s participation. The lack of education, burden of family work and poor economic status were some of the serious problems women faced while lack of information, lack of technical knowledge, lack of training and lack of time were other problems. (Uma Rani et. al, 2003) also shares the similar views and suggested that there is a need to reform the social security system to recognize the value of women’s labour at home.

Agro-Processor Women Lost their Incomes and Livelihoods in the Competitive World

(NCW, 2005, pp-185) 'Impact of WTO on Women in Agriculture', released in January 2005, studies the plight of rural Indian women through public hearings in Punjab, West Bengal, Karnataka and Bundelkhand. This is the first such assessment of the gender impact of the WTO and the globalization of agriculture. The study claims that owing to the switching over the policy’s stand of making agriculture a commercial operation, the status of women in agriculture has declined. The second part of report which deals with reports on the jan sunwais reveals about ‘Public Hearing held in Bundelkhand’ that the landless women of Bundelkhand complained that they had no property rights, and demanded that their right to property be recognized. Women of the region have traditionally been agro-processors and have the expertise in preparing gur, achaar, van papad, soaps, herbal concoctor for common ailments, rassi (rope) and baskets from kaans grass and baans (bamboo). In this competitive world, since there is shrinking demand of these products, so, most of the agro-processing units in the region have been closed down which rendered them jobless. 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 also. 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.
Double Workload Does not allow looking after themselves

(Gill J K et. al. 2007) Farm women were of the opinion that their participation in agricultural activities means their families were able to improve the overall standard of living. As regards the impact of farm women’s participation on the social status of the family, farm women felt that they were able to spend more money on social rituals and had better interaction with people in the village than their non-farm women counterparts. But at the same time they noticed a negative impact on their personal health since they had less leisure time to relax, fatigue due to a double workload, uncomfortable working positions and frustration when their work was not recognized because no credit was given to the wives’ financial contribution. They also felt the negative impact on their children because they were unable to help their children with their studies and that consequently, their children lacked interest in their studies because the women were busy performing agricultural and allied activities in addition to their household responsibilities. These findings are supported by (Kaur, 1996).

Plight of the Schedule Caste (SC) Women

The access of women particularly those belonging to weaker sections including Scheduled Castes/Scheduled Tribes/Other backward Classes and minorities, majority of whom are in the rural areas and in the informal, unorganized sector – to education, health and productive resources, among others, is inadequate. Therefore, they remain largely marginalized, poor and socially excluded.

(NCW) 1998 Schedule Caste (SC) women agricultural labourers who worked in fields of high caste landlords were exposed to all sorts of humiliation and abuse, including sexual harassment. Under the age old concepts of Artha, Dharma, Kama and Moksha, the economic dependence of SC households on agriculture, has over the centuries created a divide between those who own lands and those who do not own lands. In rural areas, it was always the SC women agricultural workers who were at the receiving end.

Exploitation of the Traditional Knowledge of Tribal Women

The history and traditional knowledge of agriculture, particularly of tribal communities, relating to organic farming and preservation and processing of food for nutritional and medicinal
purposes is one of the oldest in the world. Concerted efforts will be made to pool, distil and evaluate traditional practices, knowledge and wisdom and to harness them for sustainable agricultural growth. (Awais Mohammad et al. 2009) Because of economic and social backwardness, low level of literacy, terms of patents and intellectual property rights arising out of various international treaties/instruments on trade and common property resources such as TRIPs and WTO represent a real threat to the economic livelihood of the tribal women and a source of potential exploitation of their resource base as bio-diversity expressed in life forms and knowledge is sought to be converted into private property and treated as an open access system for free exploitation by those who want to privatize and patent it.

- **The Productivity of Female Labour is Low**

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.

- **Various Obstacles to the Official System of Credit**

Despite the constraints of the unofficial system of credit, it is still today widely used and very useful for small producers and for rural women in particular. Since there are numerous obstacles in obtaining the official credit system (from public or private national banks, rural banks, or development banks), many people still retain the unofficial system as a source of savings and loans even if this alternative has a number of negative implications. Rural women often use this system as they need small amounts of cash and the loans are granted according to social, relational and cultural conditions, and not according to purely economic conditions which would not allow women to benefit from them. Rural women have little access to information concerning official savings/loans institutions. In fact, dissemination of information from bank regarding rural credit is also a problem with the rural environment in general, and with women in particular mainly
because of illiteracy. The rare extension programs concern their operating and financial services, targeting mainly farmers, without worrying about the specific nature of female problems. This means that rural women have a very limited idea of the nature of institutional savings/loans facilities. Moreover, rural women are often considered as being insolvent because they are subsistence farmers, and are seen as a high-risk population for finance institutions. Banks and financial institutions hesitate to grant loans to women, as they are usually small loan takers and do not provide a good enough return for the banks.

- **Low Economic Position does not Allow Women to Afford Costly Inputs**

(Tiwari Nivedita, 2010) The discouraging agricultural price policy of the government makes growers nervous while discrimination in remuneration/wages for women working in the field and their poor purchasing power does not allow them to get the necessary inputs. Agricultural inputs available in the market are very costly, while the supply of electricity is irregular and government seed/fertilizer stores do not make the necessary inputs available to women farmers or at the right time, or in the quantity needed. Diesel generally disappears from the market at irrigation and threshing times when it is needed most. There are no special training programmes to develop women’s agricultural practices and technological skills.

- **Low Agricultural Income Lead to Ill Treatment**

(NCW, 2005, pp-177-184) The second part of report which deals with reports on the ‘jan sun-wais’ reveals about ‘Public Hearing held in Bundelkhand’ that the traditional central role of women in the food chain is being broken with the onset of the globalized food industry. This has led the women to bear the skewed costs of displacement. As the income of farmers in general and women in particular are eroded they are displaced from productive roles, and the patriarchal power system that controls the assets further erodes the status of women leading to their marginalization and increased violence against them. The report says that 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). Because of the remoteness of the region, basic infrastructural facilities are lacking here. As such the area has one of the lowest levels of economic and human development in the country forcing the inhabitants to live in poverty. Agriculture plays an important role in the Bundelkhand economy and it is not considered a commercial activity here. The principle crops in the area are cereals such as wheat, rice, and barley. 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. Women play an equal role in agriculture. 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 rice 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. Because of decline in farmers’ incomes women are getting ill-treated in their homes. Violence against women is growing at an alarming rate. Men are turning to liquor, which adds to women’s problems in a low-income household. They suffer from malnutrition and also harassed for dowry. Women farmers are unable to get loans from banks, as they fail to provide any security to the bank.

• Health Hazards of Agro-Chemicals

(Chekkutty N. P., 2005), The research project 'Impact of WTO on Women in Agriculture', conducted in combination with public hearings from various parts of the country, offers an in-depth analysis of the impact of WTO policies on women in India. NCW chairperson Poornima Advani released the report in January 2005. She notes that most farm operations in India are traditionally women-centred. Women are the providers of food, the custodians of our crop biodiversity heritage and food diversity. Our food security depends mainly on the work of women. One of the impacts of WTO which has been exhibited in it says that as globalization shifts agriculture to a capital-intensive chemical-intensive system, women bear the disproportionate costs of both displacement and health hazards. The introduction of herbicides and weedicides, as part of commercial farm operations, has badly affected women, as they have a monopoly over weeding and hoeing. Women farm workers are also more exposed to health hazards like gynaecological infections, arthritis, and intestinal and parasitic infections, with no medical allowances for treatment, due to the increased use of agro-chemicals.

• Lack of Technical Background and Awareness Hinders the Adoption of New Technology

(Meena, HR, 2006) In Udaipur district of Rajasthan various constraints perceived by farmers in
the adoption of recommended Jatropha cultivation were studied to prevent soil deterioration and poverty. This technology has a huge potential for replication nationwide and improving the livelihood of many. It can be used to replace petrol/diesel, for soap production and for climatic protection. Jatropha can help to increase rural income, promote self-sustainability and alleviate rural poverty. But at present this crop is not cultivated on scientific lines and is merely grown as fencing or a wild plant. The present findings are in accord with the findings of (Neelam, 2006). Lack of technical guidance and information, Inadequate training facilities for acquiring skills about Jatropha cultivation technology, Lack of suitable plantation schedule, Long gestation period of Jatropha, Lack of knowledge about scientific cultivation of Jatropha, Lack of awareness of economic value of Jatropha seeds, , Adverse climatic and edaphic factors for the survival of plants i.e. climatic factors of the area are not suitable for cultivation of Jatropha plants in the summer season are some of the reasons for non-adoption of its cultivation. (Chandel et. al., 2008) Women farmers lack knowledge and skills of the latest technologies of farm-related operations. Agricultural practices, non-availability of technology and inputs are the major constraints faced by farm women. These findings are supported by the findings of (Umale et al. 1991) and (Meena, 2005).

* Work in the Unorganized Sector is Not Counted and Hence Remains Invisible

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 stinking 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 (Remesh, 2004). Quite often, the male tapers are found supported by female members and even children of the family. The male tapers 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 of Kerala, with the commendable increase in the area under the crop at the cost of female labour intensive crops such as paddy. Too 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. The lower participation of women during the initial hours of tapping is mainly due to their engagement in domestic chores. Preparing breakfast 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.

(SEWA, website) Self Employed Women’s Association (SEWA) is a trade union registered in 1972. It is an organization of poor, self-employed women workers. These are women who earn a living through their own labour or small businesses. They do not obtain regular salaried employment with welfare benefits like workers in the organized sector. They are the unprotected labour force of our country. Constituting 93% of the labour force, these are workers of the unorganized sector. Of the female labour force in India, more than 94% are in the unorganized sector. However their work is not counted and hence remains invisible.

- **Illiteracy Paves the Way for Discrimination against Wages**

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

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).

(NCW, 2005, pp-4-5) The first part of the report is an overview about the assessment of the gender participation and an in-depth analysis of the impact of WTO policies on women in Indian agriculture. In this report the data compiled by Labour Bureau, Government of India from annual returns under the Plantation Labour Act, 1951 shows 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.
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. The report also shows that a substantial part of farm operations in Kerala involve various types of plantations including tea, rubber and coconuts. Ever since economic liberalization became the development mantra, the report states, Kerala has been at the receiving end. Flooded with cheap, highly subsidized agricultural imports, Kerala's agrarian economy has been thrown out of gear. Whether it is imports of palm oil, rubber, coffee or tea, almost every aspect of the state's socio-economy has been negatively impacted. Women carry the heavier work burden in food production, but because of gender discrimination they get lower returns for their work. When the WTO destroys rural livelihoods it is women who lose the most. When the WTO allows dumping, which leads to a drop in farm product prices, women are hit the hardest because their incomes go down further.

The Ministry of Rural Development, Government of India launched on October 2, 1993 the employment programme ‘Employment Assurance Scheme (EAS)’ to provide gainful assured employment, particularly during the lean agricultural season, in manual work to at least one able-bodied person in poor families, particularly in rural areas. The impact assessment was conducted in two rural development blocks of Mizoram, India. The guidelines clearly stated that equal remuneration should be paid to men and women workers for the same work or work of a similar nature and there should be no discrimination while employing men and women workers. Results of interviews with Village Councils (VCs) revealed disparity in the payment of wages to men and women (Lalnilawma, 2009). Though it could not be verified, the wages paid as recalled by some VCs were Rs. 80/- and Rs. 70/- per man-day for men and women respectively. Some VCs even paid Rs.60/- per man-day for women while men were paid rupees 80/- per man-day. The mode of Payment of wages was mostly made on the basis of attendance registers in cash on a weekly basis. The reason given by VCs for such disparity of wages was that they were not aware that equal remuneration had to be paid to men and women. Above all, it was a general assumption that women contributed less labour as compared to their men counterparts for the
same kind of work.

As described in the NSSO 66th Report, the male-female disparity in wages has continued to be significant, with male wages being 1.4 times the female wages as shown in table 2.8.

Table 2.8: Daily actual wages of male and female workers in 2009-10 (in Rupees)

<table>
<thead>
<tr>
<th></th>
<th>Men</th>
<th>Women</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban private</td>
<td>132</td>
<td>77</td>
</tr>
<tr>
<td>Rural private</td>
<td>102</td>
<td>69</td>
</tr>
<tr>
<td>Rural public (other than MGNREGA)</td>
<td>98</td>
<td>86</td>
</tr>
<tr>
<td>Rural MGNREGA</td>
<td>91</td>
<td>87</td>
</tr>
</tbody>
</table>

(NSSO 2011)

Thus, as per NSSO 66th Round, average wage/salary earnings per day received by male casual labours engaged in rural works other than public works was Rs. 102 and for females it was Rs. 69; while in urban areas, the wage rates for casual labours other than public works was Rs. 132 for males and Rs. 77 for females. The difference was also seen in public works, though not as stark as in private works. In rural areas, wage rates (per day) for casual labour in public works other than MGNREG public works was Rs. 98 for males and Rs. 86 for females. The difference was least for casual labour in MGNREG public works, where the wage rate (per day) was Rs. 91 for males and Rs. 87 for females (Women comprised 48 per cent of the person-days in MGNREGS).

2.7 Conclusion

In this chapter we have surveyed the literature on females participating in farming sector in countries of the Asia and the Africa. Studies covered under literature review of this chapter, all point to the conclusion that regardless the geographical area in the developing countries, the sociological condition of the females in farming sector in the selected areas is same. In the hilly areas of Nepal and Sikkim, ploughing is considered a man's job, whereas all other work, though shared by men, is mostly undertaken by women. It has been found that in all the surveyed areas, agriculture is the leading economic sector with majority of its land holdings is small and women are the principal players in it. As small land holdings do not generate much income for them, therefore households in these areas were found rearing cattle and small animals in order to augment their source of income as well as consumption of nutritious food and integrated farming. Women are responsible for most of the drudgery prone activities like planting, weeding, harvesting and transporting of the food produce. They are predominantly engaged in food crop farming and in
the processing of food items yet they are subjected to discrimination in land and cattle ownership. As far as decision making is concerned, it is found that they have more say in the activities of family decisions for which they share more responsibilities. Moreover, joint involvement in decision making has been observed in agricultural/animal and the related activities even though women perform more in agricultural related activities than men. Even they need not be consulted at the time of purchase of animals or change of crop. They face more difficulties than men in gaining access to resources such as land, market, credit and other productivity enhancing inputs and services. Female farmers in these countries are even constrained to formal education therefore are ignorant about the modern scientific and technologic technique. It has been seen in the literature survey that allied sectors (livestock rearing, floriculture, sericulture) are the occupations by women and for women, because women form more than 60% of the workforce in them. The nature of work involved in the allied sectors is mostly carried out by women and they can be gainfully employed in these sectors.

2.8 Research Gap

Our literature review finds a gap that female participation in farming sector has not been studied in Sikkim, though plenty of research is found in other parts of the India as well as in other countries the world over. This gap is mainly attributable to the following reasons:-

• Social science research in the state of Sikkim is inadequate

The place researcher selected for study is particularly important because social science research in the state of Sikkim is inadequate despite several incentives provided by the state. There are many reasons for this - including the fact that English education started off late and there are no secondary and senior secondary boards in Sikkim and the State is fully dependent on Central Boards. Very few scholars from North Bengal University and other universities have undertaken research on the socio-political and economic aspects of Sikkimese women. Though a few reports based on the Sikkim census data is found, but, published materials available in the market are based on visits to Gangtok but are not based on field-work analysis.

• Availability of unreliable data of the North Eastern region before the launching of economic journal “NEDFi Databank Quarterly” on July 2002

Data on the North Eastern region, though available, is mostly scattered and often proves difficult to gather. Moreover, much of such data collected is often unreliable. Non-availability of reliable
and authentic data on the region often hampers in the making of sound investment decisions by entrepreneurs and business persons, policy directions by policy makers, research by students & others. Now “NEDFi Databank Quarterly” journal has made the research task easy by providing the reliable data of the region.

This research will therefore go some way in filling the major research gaps in sociological studies of participation of females in Sikkim farming sector, especially as it relates to the social relations within the agriculture networks and impacts on farmers ‘livelihoods’. This piece of work will be useful for female farmers, development organizations, donors and policy makers, in formulating the development of effective initiatives and policies to support the empowerment of females participating in Sikkim agriculture in particular and females participating in agriculture at any other place in general, in an organic way.