

## **Women in Agriculture – An Analysis of Occupational Health Hazards Faced by them and Measures to Overcome it**

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### **Abstract**

Women in India are extensively involved in agriculture and other allied activities. She is considered as the backbone of agriculture, and does the most tedious and backbreaking tasks, but her hard work is mostly unpaid. More than 43% of women farm workers constitute the labour force in agriculture in developing countries. Rural women form one of the most important productive workforce, and are involved in agriculture and allied activities including crop production, livestock production, horticulture post harvesting etc. yet their services are ignored and unnoticed especially in the agriculture sector. Occupational health is an important part of a country's economy because it relies on workers' physical, emotional, and social wellbeing. Occupational health among agricultural women is a public health problem in India that requires urgent attention. In India, occupational health hazard being a public issue pose a threat to the women and need to be tackled soon. Women's roles and positions in meeting the demands of agricultural production and growth are very influential and popular. Above all, she faces ignorance, financial pressures, a lack of sufficient educational services, sexual harassment, poor wages, and so on. Their importance in the agricultural sector is equal to that of men. As a result, farm women should be educated. This paper focusses on the trends in the women's participation, occupational health hazards faced by them and measures to overcome it. **Key words:** Women workers, Agriculture, Occupational Health hazards

### **Introduction**

Agriculture in India comes under the purview of the informal sector and represents the face of Indian. This informal sector is the most easily available option of work because of their flexible arrangement for women with children to look after. The informal sector such as agriculture, transport, trade, industry, education, health sector, construction work etc, do not have a formal organisation, recognition or support from the government or any other private body. Women prefer informal sector as the primary source of income, because of their limited education, knowledge, as well the need to balance work and life with ease. With no standard safety measures in terms of occupational health, it poses risks of life to them. Women play a very pivotal role in agriculture, but their contribution has never been fully recognised. They work in various capacities such as farm labourers, plant labourers, storage of seeds, collection of fuel and fodder, harvesting, winnowing, thrashing etc. Women when compared to men in small and marginal families carry heavy loads both at the farm and in the house which takes a toll on their health.

Women in developing countries are actively engaged in farming practices and contribute in the socioeconomic development of their conditions. However, low socioeconomic status, early marriages, young maternal age, and inadequate prenatal care have raised the danger to the lives of mothers and children. Women face a variety of issues, including health insurance, working conditions, and language and cultural barriers. Women farm workers have varying degrees of certain common diseases, with a poor diet being the most likely cause. Heart disease, stroke, pneumonia, diabetes, obesity, and hypertension are examples of these conditions as well as well as bronchitis, stomach ache, constipation, diarrhoea, conjunctivitis etc. The relationship between agriculture and health is bidirectional, as agriculture influences health and health influences agriculture.

Women's wellbeing is inextricably related to environmental, political, educational, and socioeconomic influences. Women in agriculture are at risk of serious health problems as a result of their work schedules, undernutrition, occupational hazards, and health problems caused by the use of pesticides. Occupational health is an important component of the country's infrastructure, and job protection and health improve production and have a positive effect on economic and social growth. The morbidity trend of female agricultural workers shows that their illnesses are more associated with insecurity and profession than with lifestyle. Apart from insecurity and inequality, the insensitivity of the health-care system contributes to rural women's poor health. Laws should be revised to include the entire spectrum of physical, environmental, and biological threats to which personnel are vulnerable. Women in the agriculture sector place the least value on occupational health and their jobs are critical to their survival.

### **Review of Literature**

**Smita Tripathi and Neelma Kunwar (2016)** conducted a study in Kanpur district contended that though women played an important role in agriculture, they were exposed to the effects of potential occupational health hazards. These health hazards were abortion, respiratory problems, low baby weight.

**M Maroni · Anna Clara Fanetti, Francesca Metruccio (2006)** stated that regular use of pesticides in agriculture has severely affected the health of female workers. In spite of the economic and social importance of agriculture, the health protection of agricultural workforce has been neglected since many years causing serious unavoidable diseases, human suffering and economic losses.

**K Mobed, E B Gold, M B Schenker (1992)** contented the development and implementation of standardized data collection instruments to characterize and reduce occupational health hazards of farm workers, as well as scientific assessments of farm job exposures and working conditions, is vital.

**Nishi Slathia** in her paper shows that the contribution of women in agriculture is extremely significant. The paper also throws light on the obstacles faced by them in terms of less access to productive resources which do not recognized her work as active productive member. The contributions made by women were explained by her by giving weightage to the problems by them. The paper on the whole descriptively interprets the role and significance of women towards the field of agriculture.

**MunMunGhosh** in her research paper reiterated the participation of females in agriculture in various states of India. He has used secondary data collated for the research to study the growth trend of the agricultural worker from 1961-2001. The analysis was done by segregating the complete on the basis of states and their identical behaviour of participation in the agriculture sector. Coefficient variation, participation of work rate and rate of compound growth have been used in the article to prove the trends.

**Singh and Vinay (2012)** in their working paper, discussed the importance of female labour in agriculture and related practices. They went on to say that the role of women in agriculture, as well as female labour, is under-appreciated in India. Despite their participation in sowing, transplanting, and post-harvest operations, they are regarded as unseen jobs.

### **Research Gap**

The discussion above states that limited efforts have been made in exploring the study to assess the health hazards faced by women in the agriculture sector. It was also found that there is paucity of literature in determining the significant causes and effects of health hazards in the agricultural sector. Hence, the literature in this regard seems to recognise that the efforts made so far in this respect have not yielded sufficient results and it perhaps for this reason that a detailed study need to be undertaken to explore the occupational health hazards faced by women in agricultural as well as informal sector with special reference to Barabanki district.

### **Aim of the Study**

The main purpose of this study is to explore the occupational health hazards faced by women in agricultural as well as informal sector. **Objectives of the Study**

- To assess the various occupational health hazards faced by women in agricultural activities.
- To highlight the challenges faced by women in the agriculture sector.
- To suggest suitable policy measures for prevention of health hazards.

### **Research Methodology**

The data was collected from primary as well as secondary sources such as Census of India and statistical report on the profile of women labour as well data from International Labour Organisation and World Bank respectively. Descriptive and exploratory research designs were used. For the purpose of primary data, 5 villages of Barabanki district of Uttar Pradesh was taken. From each village 20 farm women workers were selected for the study. A total sample size of 100 women farm workers was selected, both landless, marginal and small farmer category.

### **Characteristics of Women Workers**

Women agricultural workers are homogenous and need to be distinguished with differentiated needs and problems. The following discussion presents the distribution of rural female agricultural workers based on caste, age, class and geographical location.

## **Age Composition**

Male and female farm workers have a median age of 35 to 39 years. However, in terms of the proportion of agricultural workers in each age group, male representation increases with age, although unevenly, peaking at 55-59 years. The trend for women is different: a smoother, twisted 'U,' with attendance peaking at 40 to 44 years old and dropping afterward. Data also shows that younger males and females (35 to 39 years) prefer casual labour in agriculture, owing to the high physical demands, whereas women in their prime (40-49 years) and older men (above 50 years) tend their own farms. Currently, the majority of female employers (over 93% of all employees) are married.

## **Regional Characteristics of Women's Work Participation**

The 15 big states can be classified into two categories based on the all-India average rural female WPR (2004-05). The first party, which includes Himachal Pradesh, Andhra Pradesh, Maharashtra, Tamil Nadu, Karnataka, Gujarat, Rajasthan, and Madhya Pradesh, has consistently high female WPRs both overall and in agriculture. In the second group, Punjab, Orissa, Haryana, Kerala, Uttar Pradesh, West Bengal, and Bihar have low female participation rates. Agriculture employs the majority of rural women employees in Haryana (91%), Punjab (90%), Uttar Pradesh (87%), and Bihar (86%), with only Bihar exhibiting strong casualization. Women make up a lower proportion of the agricultural workforce in West Bengal and Kerala.

The north-eastern states of Arunachal Pradesh, Mizoram, Nagaland, and Manipur have high female agricultural involvement while having a low incidence of female casual labour (4 to 5 per cent). Assam has a higher percentage of female agricultural participation than the other states in the country, with a higher proportion of female casual labour (21%), while Tripura has only 48% of its women in agriculture, but only 40% in casual workforce.

Clearly, a number of factors influence women's agricultural engagement. Besides agro climatic conditions, other considerations include crop type (food or cash crops, wheat, rice, or coarse cereals), irrigation availability, agriculture type (market or subsistence), crop strength, diversification degree, extent of technology, and mechanization levels, poverty, backwardness, caste, class, cultural backgrounds and seclusion, level of education and expertise, and access to non-farm resources all affect the degree of women's empowerment.

## **Results and Discussion**

### **To Investigate the Trends in the Men's and Women's Participation in Agriculture.**

The backbone of any rural economy are said to be women and their link to agriculture is age old. Women account for nearly half of the world's population, and their labour accounts for 60% of all hours worked, including up to 30% of official hours. In spite of all this, women receive just 10% of global income and own less than 1% of the world's property. The important role of women is not only recognised in agricultural production but also in other fields like horticulture, fisheries, sericulture, mushroom cultivation. Agriculture has increased in importance, but so have food preservation, horticulture, manufacturing nutrition, sericulture, fisheries, and other related industries. In the majority of developing countries, including India, the most significant active labour force is women. Since the majority of rural Indian women are involved in some aspect of agriculture, they are in many ways considered to be farmers like

their male counterparts. Women in rural areas play an important role not only in crop production but also in related practices such as horticulture, livestock poor-harvest operations, animal care, agro-forestry, and fisheries.

**Table 1: Trends in Percentage of Female and Male Employed in Agriculture in India (1995-2017)**

Year	% of Female employed in agriculture	% of Male employed in agriculture
1995	73.9	55.9
1996	74.4	55.8
1997	74.8	55.5
1998	75.5	55.8
1999	75.5	55.4
2000	74.9	54.2
2001	74.9	54.9
2002	74.1	53.5
2003	73.5	52.8
2004	72	50.7
2005	71.1	49.5
2006	69.5	49.0
2007	68.3	47.9
2008	67.6	47.1
2009	66.6	46.8
2010	65.4	46.2
2011	63.1	42.6
2012	62.3	42.4
2013	62.5	42.4
2014	623	41.7
2015	61.6	41
2016	60.6	40.1
2017	59.9	39.3

**Source: ILO STATS Database (March 2017)**

The above table shows the time series percentage data of men and women engaged in agriculture from 1995-2017. It also depicts the comparative date of both men and women employed in agriculture. Though women comprise a major of labourers engaged in agriculture, there has been a considerable decline in their participation. The participation of women was more in the earlier, but it slowly declined and the major caused attribute to this was better education, empowerment, and urbanization. However, the decline in the participation of men as compared to women was low.

### **To Analyse the Effect of Education on the Participation of Women in Agriculture**

Women have played a critical role in the survival of basic life support systems such as soil, water, flora, and fauna, and they continue to do so. The most popular cause for Indian women's

increased labour force involvement in the manufacturing and service sectors is due to industrialization and growth. This may be seen as one of the causes for the deterioration of the agricultural sector in recent years. Growing government policies have made it mandatory for all people to receive compulsory education before they reach the age of 14. It is undeniable that female educational participation has increased in both rural and urban areas, especially since 2007. Training is the primary cause for the evident exclusion from the labour force of rural girls aged 15 to 19, which can only be a positive thing. In a modernizing world, education is found to have a higher payoff in terms of production than in conventional agriculture (Som P Pudasaini, 1983). Economic independence, decision-making skills, agency, and access to education and health care are all closely linked to the industry, and this has resulted in externalities such as insecurity and marginalization, as well as exacerbated gender inequality. The aim of this objective is to see whether education has played a role in lowering women's participation in the workforce.

**Table 2: Literacy Rate Year % of Female Employed**  
 in Agriculture  
 Male Female Literacy rates  
 Gender gap

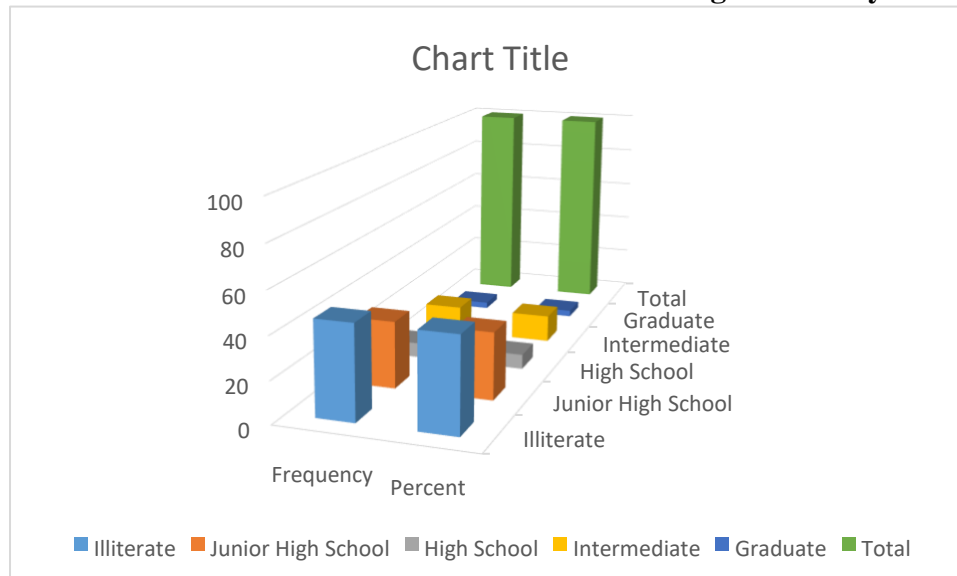
1951	18.33	27.33	8.86	18.30
1961	28.3	40.4	15.35	25.05
1971	34.35	45.96	21.97	25.05
1981	43.57	5.38	29.76	26.62
1991	52.21	64.13	39.29	24.84
2001	64.83	75.26	53.67	21.59
2011	74.04	82.14	65.46	16.68

*Source: Census of India*

**Table 3: Distribution of Farm Women Workers According to Literacy N=100**

<b>Educational standard</b>	<b>Frequency</b>	<b>Percent</b>
Illiterate	45	45.0
Junior High School	32	32.0
High School	07	07.0
Intermediate	13	13.0
Graduate	3	3.0
<b>Total</b>	<b>100</b>	<b>100.0</b>

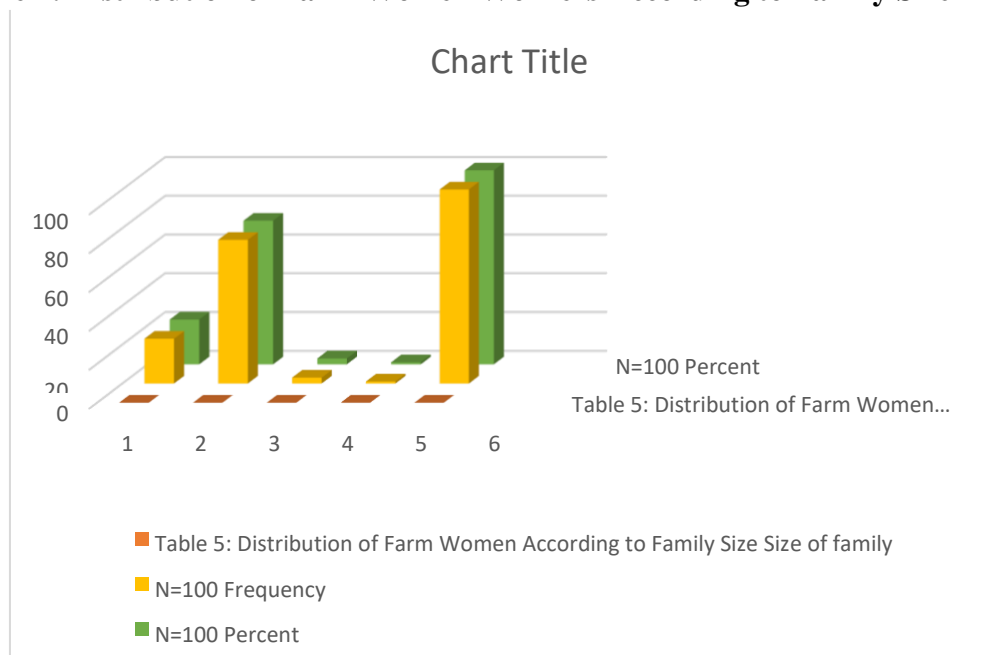
**Figure 1: Distribution of Farm Women Workers According to Literacy** **N=100**



**Table 4: Distribution of Farm Women Workers According to Family Size** **N=100**

Size of family	Frequency	Percent
3 members	23	23.0
4-6 members	74	74.0
7-9 members	3	3.0
Above 10 members	1	1.0
<b>Total</b>	<b>100</b>	<b>100.0</b>

**Figure 2: Distribution of Farm Women Workers According to Family Size** **N=100**



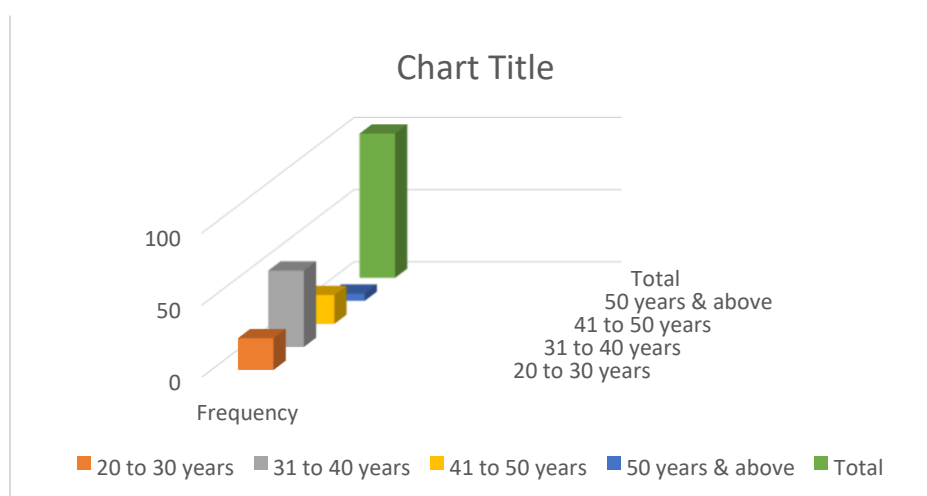
**Table 5: Distribution of Farm Women Workers According to Age Group**

**N=100**

Age Group	Frequency	Percent
20 to 30 years	22	22.0
31 to 40 years	53	53.0
41 to 50 years	20	20.0
50 years & above	5	5.0
Total	100	100.0

**Figure 3: Distribution of Farm Women Workers According to Age Group**

**N=100**



It is clear from the above table that 50.0 percent of farm women working in the fields were between the ages of 30 and 40, followed by women in the age group of 20 to 30 and 41 to 50 years. Women in the older group i.e. 50 years and above were lowest.

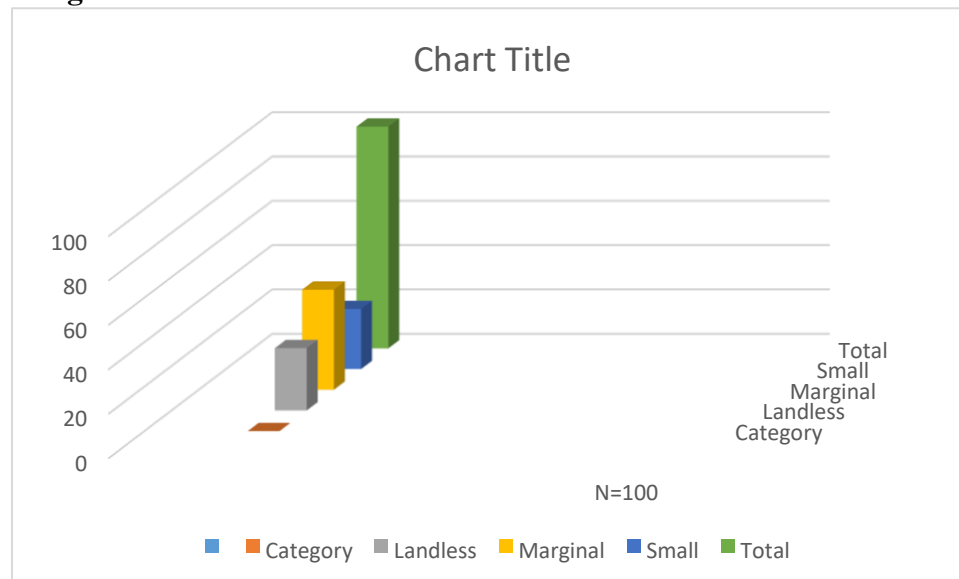
**Table 6: Distribution of Farm Women Workers According to the Size of the Land Holding**

**N=100**

Category	Frequency	Percent
Landless	28	28.0
Marginal	45	45.0
Small	27	27.0
Total	100	100.0



**Figure 4: Distribution of Farm Women Workers According to the Size of the Land Holding** N=100



### **To Assess the Health Hazards Faced by Women in Agricultural Activities**

In India rural women spent a lot of time in agriculture and long hours spent in water while weeding and transplanting increase susceptibility to vaginal infections, parasitic diseases and insect bites. Direct and constant exposure to heavy doses of pesticides while picking and processing crops present serious threats to women and their foetuses. Risks of interconnected health The immersive and synergistic nature of health hazards is stressed in the same report. As a result, ineffective sanitation, inadequate water supply and waste disposal, heavy indoor air pollution, and overcrowding all pose serious and intertwined health risks to the poor. Acute respiratory diseases, chronic lung disease, cancer, and a lower fertility rate are also possible outcomes.

The immersive and synergistic nature of health hazards is also highlighted in the same report. As a result, weak sanitation, inadequate water supply and waste disposal, heavy indoor air pollution, and overcrowding pose serious and interconnected health risks to the poor. Acute respiratory diseases, chronic lung disease, cancer, and a lower fertility outcome are only a few of the complications. Because of their preponderance in labour-intensive manual work in the fields and therefore proximity to high doses of pesticides in the soil and surface water, as well as the items they treat, the WHO study on women's health in Eastern and Central Europe describes exposure to pesticides in agricultural work as perhaps the greatest occupational health risk to women. Women are subject to harmful chemicals and physical discomfort in factories that process coir, jute, and cashew nuts, which contain cotton, tea, or rubber, as well as the garment industry. Women's exposure to cooking fumes was estimated to be equal to smoking 20 packs of cigarettes per day in one Indian survey of rural kitchens (World Bank, 1996).

Respiratory infections and tuberculosis are among the health problems that rural Pakistani women face, according to the study.

**Table 7: Link Between Agriculture and Health Hazards**

<b>Occupational hazards:</b>	<b>Occupational health problems:</b>
Psychological Hazards: Stress, Lack of motivation, insufficient job satisfaction, emotional imbalance, interpersonal problems	Physical health Problems: Back Pain, joints pain, eye infections, swellings, chest pain, muscular pain, urinal infection, musculoskeletal problems, shoulder pain,
Physical Hazards: Contact with insects, dust, water, soil, water animals, manures, poor illumination, solar rays, heat and humidity	Gynaecological Health Problems: Frequent miscarriages, abortions, menstrual problems, continuous bleeding, burning vaginal sensation, cramps, pelvis pain.
Chemical Hazards: Insecticides, Pesticides, bactericides, fungicides	Psychological Health Problems: Sleeping disorders, behavioural problems, spousal relationships, alcoholism, chewing of beetal leaves.

**Table 8: Distribution of Farm Women According to Health/Occupational Problems Faced by Them in Various Agricultural Activities**

**N=100**

<b>Problems</b>	<b>Yes</b>	<b>No</b>
<b>Physiological Problems</b>	<b>68</b>	<b>32</b>
<i>Allergy</i>	<b>78</b>	<b>22</b>
<i>Headache</i>	<b>52</b>	<b>48</b>
<i>Vomiting</i>	<b>35</b>	<b>65</b>
<i>Suffocation</i>	<b>56</b>	<b>44</b>
<i>Coughing</i>	<b>55</b>	<b>45</b>
<i>Chest Pain</i>	<b>39</b>	<b>61</b>
<i>Dizziness</i>	<b>42</b>	<b>58</b>
<i>Fatigue</i>	<b>82</b>	<b>18</b>
<i>Swollen hands and feet</i>	<b>90</b>	<b>10</b>
<b>Reproductive Problems</b>		
<i>Low body of baby</i>	<b>37</b>	<b>63</b>
<i>Abortion</i>	<b>17</b>	<b>83</b>
<i>Low Body weight of the mother</i>	<b>91</b>	<b>09</b>
<i>Bleeding</i>	<b>87</b>	<b>13</b>
<i>Still birth</i>	<b>15</b>	<b>85</b>
<i>Poor Lactation</i>	<b>75</b>	<b>25</b>
<b>Skin Problems</b>		
<i>Dermatitis</i>	<b>58</b>	<b>42</b>
<i>Sunburn</i>	<b>90</b>	<b>10</b>

<i>Skin cancer</i>	<b>58</b>	<b>42</b>
<i>Swellings</i>	<b>88</b>	<b>12</b>
<b>Ergonomic Problems</b>		
<i>Backache</i>	<b>80</b>	<b>20</b>
<i>Body Pain</i>	<b>88</b>	<b>12</b>
<i>Shoulder Pain</i>	<b>87</b>	<b>13</b>
<i>Spondylitis</i>	<b>76</b>	<b>24</b>
<i>Knee Pain</i>	<b>90</b>	<b>10</b>
<i>Joints Pain</i>	<b>92</b>	<b>08</b>

Farm women workers while working in various agricultural activities face many health issues which damages their nervous system as well caused many skin related problems. Many respondents were not even sure about the chemicals and pesticides they were being exposed to. No amount of training was provided to them with regards to use of pesticides, chemicals and insecticides.

### **To Find Out the Challenges Faced by Women in the Agricultural Sector**

Despite women's apparent active involvement in agriculture and the economic value of this involvement, women engaged in agricultural activities in the previous reported facing difficulties that affect their participation in the field. Seasonal and geographical challenges were recorded as the primary challenge faced by 39 percent of women. seasonal and spatial difficulties were stated to be the primary challenge faced, by 39 percent of women. This is indicative of the fact that water shortages and Seasonal/ regional problems include concerns relating to land and water and/ or being required to travel through seasons to participate in paying agricultural labour. At 24 percent, the second most commonly recorded primary problem was of a socio-cultural nature, which included a lack of land ownership, shame society, 128 domestic duties, (threat of) abuse, and crime. Financial and economic challenges, as well as legal and policy-related challenges, were also regularly recorded (20% and 17%, respectively).

### **Policy Provisions**

The government must invest in workplace health and enact required labour laws, and social security programs which can generate positive outcomes. A national level database on the occupational hazards and health issues faced by agricultural woman workers should be developed, which will provide consistency in the formulation of policy and framework. Social literacy camps should be held to educate women workers about their status, government programs, and policies. Women employees must be empowered with health education and information in order for them to work collaboratively for the betterment of their lives. Physicians, paramedics, physiotherapists, social workers, psychologists, among others, should receive further workplace health instruction and retraining. The government should make it obligatory for workers to have sufficient safety measures such as gloves, face masks, head

covers.ec. Agriculture's occupational wellbeing must be discussed, and a well-planned policy should be combined with rural development services with the assistance of national policies.

## **Conclusions**

Women's health in agriculture is the foundation for the nation's growth since they constitute the majority of the nation's future human capital. Since occupational health is closely related to production and the economy, this research is important to the nation's general well-being and economic growth. India, despite being a vast agricultural region, lacks a comprehensive legislative system to resolve the occupational health issues that agricultural women face. The government must appoint a commission or task force to develop a strategy on the occupational risks and health problems that agricultural women face. A variety of variables, including age, sex, race, temperature and humidity, working conditions, hours worked, prior body or skin disorders, personal hygiene, and so on, predispose farm women to different health hazards.

The type of agricultural operation, the type of worker, and the geographic area all have an effect on health and injury. Sharp instruments and snake bites, for example, can inflict painful wounds and even death. Skin disorders at work are often easy to spot but impossible to diagnosis. The most important ways of protection are to wear enough protective clothing and to wash regularly. Skin cancer is a problem on the farm due to the long hour's farmers spend in the field. Skin cancer is the most prevalent form of cancer, accounting for approximately 39.6 percent of all cancer diagnoses in India each year. Ninety percent of all skin cancers develop on areas of the body that are not normally protected by clothes. The back of the neck is a common source of worry for farmers.

Occupational disorders will be India's biggest public health concern in the coming years. Farm women should be prevented from excessive sun exposure, particularly between the hours of 10 a.m. and 4 p.m. They should use sunblock creams that absorbs or deflects ultraviolet radiation between 10 a.m. and 2 p.m., wear reflective garments such as long-sleeved tops, trousers, and wide-brimmed hats, and do routine self-examinations for early detection. Farm women also experience scratching, swelling, bloated, and bruised hands and feet, as well as allergies, foetal death, and birth defects.

## **Suggestions and Recommendations**

The aim of this research was to assess the health hazards faced by farm women workers. It is clear that women make up the majority of those working in the agriculture. Although it is crucial for women to receive education, it is also critical for the country to maintain its agrarian economy's natural beauty and culture. As more workers leave the industry, the sector's legacy will be destroyed. Women who serve as unseen labours must be given equal importance in all the areas as compared to men which will about the desired change. Since women have different ergonomical characteristics than men, it is critical to undertake women-oriented agricultural research and design gender-friendly tools and equipment to extract solutions that reduce health risk and production loss. This would reduce farm women's health problems while also improving their status, efficiency, and profitability, and thus contributing to the country's economic growth. Setting goals and strategies to eliminate/control/minimize the dangers associated with occupational and safety hazards. Steps should be taken to establish safety requirements for the design, production, and operation of tractors and other agricultural

equipment, based on sound technical principles and agreed international experience. When dealing with or using chemicals, use adequate safety precautions such as hand gloves, facial masks, apron, booths, and so on. Farm women workers should be given rest breaks in between tasks. Women should be trained in the use of agricultural implements by the Department of Agriculture. Extension staff can disseminate emerging technology into a monthly training and awareness program for women. Use of “environmentally friendly” brands and logos, extensive advertising on TV and radio, sponsorship of cultural and educational programs in remote communities, and so on.

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