# Adoption of Drudgery Reducing Tools among Farm Women

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## ABSTRACT

*Agriculture has an important role in the Indian economy and most of the agricultural operations are done by farm women which show that they are the major workforce in agriculture right from sowing to harvesting. Women are the backbone of agricultural work force because they perform more than 79% of farm activities such as seeding, transplanting, weeding, fertilizer application, plant protection, thinning, harvesting, processing, shelling, winnowing, storing, etc. The research study was conducted in purposively selected four villages Gunia, Belagardha, Burhu and Khambhiya (Gharghra block) of Gumla District because demonstrations on drudgery reduction tools were conducted in these villages. Farm women of these villages were also distributed with drudgery free tools and equipments like groundnut decorticator, improved sickle and maize sheller. From four selected villages, a sample size of one hundred twenty farm women (thirty from each village) were included under study. An interview schedule was used to collect data on stated objectives which consist of questions pertaining to personal and socio-economic characteristics of the respondents, awareness and adoption of drudgery reduction tools and implements. It was found that majority (64.16%) of farmwomen had high level of awareness about drudgery reducing tools and implement (groundnut decorticator, improved sickle and maize sheller) followed by medium level (20.83%) and (15%) low level and majority (56.66%) of farmwomen had high level of adoption of drudgery reducing tools and implements.*

***Key words:*** *Awareness; Adoption and Drudgery Reducing Tools;*

Agriculture has an important role in the Indian economy and most of the agricultural operations are done by farm women which show that they are the major workforce in agriculture right from sowing to harvesting. Women are the backbone of agricultural work force because they perform more than 79% of farm activities such as seeding, transplanting, weeding, fertilizer application, plant protection, thinning, harvesting, processing, shelling, winnowing, storing, etc. *Singh et al., (2016)* stated that majority of the farm women were performing digging, sowing, manuring, and drying of grain and various livestock activities. Women as farmer or farm workers, participate in several activities such as seeding, transplanting, weeding, fertilizer & manures application, plant protection, thinning, harvesting, processing, selling, winnowing, storing, etc. (*Begam, 2000; Oberoi and Singh, 2001; Mukherjee, 2014*). Drudgery is considered as physical and mental strain, agony, monotony and hardship faced by human beings. In India, nearly 50-60 per cent of women workforce is engaged in agriculture and majority of the agricultural work are drudgery prone. *Bhushan et al., (2016)* found in their study that most of the respondents were using traditional tools and implements since a long time. These traditional tools and implements cause many health hazards among women. Due to lack of knowledge and information they take body related pain as a normal part of work. *Pandey et al. 2014* said that labour intensive field operations, excessive reliance on human power, low level of adoption of drudgery free tools, are the reasons that are responsible for health hazards. *Singh et. al. (2018)* assessed the efficiency of improved tools designed for farm women viz. tubular maize sheller, hanging type double screen grain cleaner (hanging

sieve), groundnut decorticator, manual twin wheel hoe and serrated sickle over conventional one during agricultural operations and found that these tool were appropriate to save time, energy and reduce drudgery. Factors like educing implement, low productivity of human labour, difficult nature of work and decrease in the labour available for agriculture effect the health of farm women (*Patel et al. 2015*). Other factors might be poverty, inadequate training and lack of awareness, which delay to deal with the occupational related health problems.

The health of farmwomen is one of the important resources for agricultural development. Therefore, drudgery reduction measures needs to be initiated to avoid occurrence of health hazards among farmwomen. Hence, an urgent need to make women aware about latest drudgery reducing tools, implements and other technologies and motivate them to adopt the same was felt. If appropriate drudgery reduction technologies are made available to the farmwomen at home and farm, it would definitely contribute in reducing their drudgery, increasing their working capability, increasing farm production resulting in improved quality of life. Several types of drudgery reducing technologies are available in market (*Sharma et al. 2015*) but to what extent these are being used by farmwomen and whether farmwomen are aware about these technologies or not are the questions of investigation. The main objective of the study was to assess awareness and adoption of drudgery reducing tools and implements by the farm women.

## METHODOLOGY

The research study was conducted in purposively selected four villages Gunia, Belagardha, Burhu and Khambhiya (Gharghra block) of Gumla District because demonstrations on drudgery reduction tools were conducted in these villages. Farm women of these villages were also distributed with drudgery free tools and equipments like groundnut decorticator, improved sickle and maize sheller. From four selected villages, a representative sample size of one hundred twenty farm women using drudgery reduction tools (thirty from each village) were included under study. An interview schedule was used to collect data on stated objectives which consist of questions pertaining to personal and socio-economic characteristics of the respondents, awareness and adoption of drudgery reduction tools and implements.

## RESULTS AND DISCUSSION

*Personal and Social variables of farm women* : It is evident from the data given in Table 1 that that majority (58.33%) of farmwomen belonged to middle age group and only 12.5 per cent were of young age group. Majority (45.83%) of farmwomen were illiterate, only some (2.5%) had secondary school education. Majority (91.67%) of farmwomen we belonged to SC/ST caste category and (51.67%) of farmwomen had joint family. Majority of respondents (70.83%) had medium size family. It is depicted from the findings that majority of the farm women who were involved in farming were of middle age group.

**Table 1. Personal and social variables of farm women (N=120)**

| Variables | | No. | % |
|---|---|---|---|
| *Age* | Young (18-30 years) | 15 | 12.50 |
| | Middle (31- 50years) | 70 | 58.33 |
| | Old (Above 50 years) | 35 | 29.17 |
| *Educational level* | Illiterate | 55 | 45.83 |
| | Primary | 27 | 22.50 |
| | Middle | 08 | 6.67 |
| | Secondary | 10 | 2.50 |
| *Caste* | Lower caste (SC/ST) | 110 | 91.67 |
| | Other Backward Caste | 10 | 8.33 |
| *Family type* | Nuclear | 58 | 48.33 |
| | Joint | 62 | 51.67 |
| *Family size* | Small (upto 4) | 23 | 19.17 |
| | Medium (5-8) | 85 | 70.83 |
| | Large (8 and above) | 12 | 10.00 |
| *Occupation* | Farming | 120 | 100 |
| | Only one | 7 | 5.83 |

**Table 2. Economic variables of the farm women (N=120)**

| Variables | | No. | % |
|---|---|---|---|
| *Land Holding* (in acres) | Marginal (< 2.5 acres) | 115 | 95.83 |
| | Small (2.6-5.0 acres) | 05 | 4.16 |
| *Annual Income* (Rs.) | Low(1 lakh) | 87 | 72.50 |
| | Medium(1-1.5 lakhs) | 23 | 19.17 |
| | High (1.6-2.5 lakhs) | 10 | 8.33 |
| *Type of housing* | Katcha | 110 | 91.67 |
| | Mixed | 10 | 8.33 |
| Livestock | Small (< 5) | 80 | 66.67 |
| | Medium(5 to 10) | 40 | 33.33 |

*Economic Variables of Farm Women* : Table 2 reveals that majority (95.83%) of farm women were having marginal land followed by (4.16%) small land holding.

**Table 3. Drudgery level perceived by farm women during farming activities (N=120)**

| Farm activities | Most drudgery | | Moderately drudgery | | Least drudgery | |
|---|---|---|---|---|---|---|
| | No. | % | No. | % | No. | % |
| Carrying dung and produce | 69 | 57.5 | 32 | 26.67 | 19 | 15.83 |
| Weeding | 97 | 80.83 | 23 | 19.17 | - | 0.00 |
| Manual Harvesting | 84 | 70.00 | 25 | 20.83 | 11 | 9.17 |
| Threshing | 59 | 49.16 | 45 | 37.50 | 16 | 13.33 |
| Groundnutdecorticating | 93 | 77.5 | 27 | 22.5 | | |
| Winnowing | 45 | 37.5 | 67 | 55.83 | 8 | 6.67 |
| Maize shelling | 94 | 78.33 | 23 | 19.17 | 3 | 2.50 |
| Sowing | 48 | 40.00 | 56 | 46.67 | 16 | 13.33 |

Majority (72.50%) of farm women had relatively low level of income. Only (8.33%) had high level of income. Majority (91.67%) of the farmwomen had the katcha houses. Majority (66.67%) of the farmwomen had medium size of herds.

*Drudgery level perceived by farm women in farming* : Data in Table 3 indicates that weeding was most drudgery prone operation (80.83%) followed by maize shelling (78.33%), maize shelling (78.33%) and groundnut decorticating (77.5%).Farming activities which were perceived as moderately drudgery prone by majority (55.83%) of farmwomen were winnowing, (46.67%) were sowing, threshing (37.50%). Least drudgery prone activities were cleaning of farm produce (15.83%) followed by threshing (13.33%) and harvesting (9.17%). So it is clear from the table most of the farm activities are drudgery prone. *Kumar et al. (2011)* reported drudgery of farmwomen was increased when they work by bending, long hours and in the scorching sun.

*Awareness and adoption level among farm women of drudgery reducing tools and implement* : It is revealed from data presented in Table 4 that a majority (64.16%) of farmwomen had high level of awareness about drudgery reducing tools and implement (groundnut decorticator, improved sickle and maize sheller) followed by medium level (20.83%) and (15%) low level. *Pandey et. al. (2013)* indicated that maize sheller was found much better than their local practices in shelling efficiency (98% vs 91%), labour requirement (4 vs 6 man h /q), field capacity (25 vs 16.67 kg/ h) and damage/ broken grains (1% vs 20%). It has also reduced the health hazards like hand pain, shoulder pain, backache and waist pain in majority of the respondents. Majority of farm women were found having level of awareness because many demonstrations were conducted in these villages on use of improved drudgery tools and implements and some improved improved drudgery tools and implements like improved sickle and maize sheller were distributed among fifty farm families.

**Table 4. Distribution of the respondents according to awareness level regarding Drudgery reducing tools and implement (N=120)**

| Awareness level | No. | % |
|---|---|---|
| Low (< 50) | 18 | 15 |
| Medium (50 to 65) | 25 | 20.83 |
| High (> 65) | 77 | 64.16 |

*Adoption level among farm women of drudgery reducing tools and implement* : It is depicted from Table 5 that majority (56.66%) of farmwomen had high level of adoption of drudgery reducing tools and implements. Only 27.5 per cent of respondents had medium level of adoption of drudgery reducing implement. It can be inferred from the findings that only (15.83%) farm women had low level of adoption of drudgery reducing tools and implement. *Patel et al. (2015)* said that they should use appropriate drudgery reducing tools and implements for that work where stress is severe. *Singh et al. (2014)* reported higher working efficiency while harvesting with serrated sickle.

**Table 5. Adoption level among farm women of drudgery reducing tools (N=120)**

| Adoption level | No. | % |
|---|---|---|
| Low (< 50) | 19 | 15.83 |
| Medium (50 to 65) | 33 | 27.5 |
| High (> 65) | 68 | 56.66 |

*Correlation coefficient between adoption of drudgery reducing tools and independent* : The data presented in Table 6 revealed that correlation between adoption of drudgery reducing tools and independent variables of the farm women. The independent variables like educational qualification, occupation, land holding, annual income, livestock ownership and awareness of

**Table 6. Correlation coefficient between adoption of farm women of drudgery reducing tools and independent variables (N=120)**

| Independent variables | 'r' value |
|---|---|
| Age | -0.8736** |
| Educational qualification | 0.3788** |
| Caste | -0.00599$^{NS}$ |
| Family type | -0.1157$^{NS}$ |
| Occupation | 0.0830** |
| Land Holding | 0.3761** |
| Annual Income | 0.6821** |
| Livestock ownership | 0.5860** |
| Awareness of drudgery reducing tool | 0.5344** |

NS- non significant

**Significant at 0.01 level of significance

drudgery tools were positively and had high significant correlation with the adoption of drudgery reducing tools whereas the variables like age, caste, and family type were observed negatively correlated with the adoption of drudgery reducing tools.

## CONCLUSION

Drudgery of farmwomen is a major issue although they do not express it and suffer silently. Drudgery reduction measures needs to be initiated to avoid occurrence of health hazards among farmwomen. It is concluded from the study that among farming activities most drudgery prone activities perceived by high majority of farmwomen were weeding, groundnut decorticating, maize shelling and harvesting etc. Almost all farm activities were drudgery prone so use of drudgery tools and implements should be promoted at village level. While seeing the majority of farm women under high adoption level, it is concluded that it has become necessary to create more awareness among farm women regarding drudgery reduction tools for their better health and happy life. *Ahlawat et. al. (2018)* stated that groundnut decorticator, maize Sheller and sickle have been found highly acceptable among farm women and must be popularized intensively and made available in the market for adoption.

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