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Research Paper :

Agricultural engineering interventions to increase the efficiency of women in agriculture: some studies from India

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ABSTRACT

The woman is the backbone of the agricultural workforce, but worldwide her hard work has mostly been unpaid. She does the most tedious and back-breaking tasks in agriculture, animal husbandry and homes. The research efforts at the ICAR institutes have been tried to relieve her of the drudgery by providing tine and labour saving tools such as improved weeders, winnowers, threshers, paddy transplanters. The interventions were also provided in the areas of nutritional security, dryland and irrigated agricultural technology etc. Vocational trainings are also being conducted to impart skills to undertake different vocations. In extension activities the women is now centre point and activities are being planned keeping her in view. Her enlightenment will change the face of the rural India. Women are involved in various activities related to agricultural and allied enterprises and some of these activities have found to have profound health risks on women. In such situation introduction of agricultural implements has been proved effective in relieving drudgery. Present paper is such an effort to analyse studies conducted by various ICAR institutes in improving efficiency and boosting agricultural production through agricultural engineering interventions. These studies were conducted at various ICAR institutes such as National Research Centre for Women in Agriculture(NRCWA), Bhuvaneshwar, Orissa, Bhopal sub center of NRCWA, Central Institute of Agricultural Engineering (CIAE), Bhopal, Central Research Institute for Dryland Agriculture (CRIDA),Hyderabad, Central Rice Research Institute (CRRI), Orissa, Krishi Vigyan Kendras sponsored by Indian Council of Agricultural Research, New Delhi, and through the networking of these institutes with various states.

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The general trend existing in rural India is limited resources available to women because of low socio-economic status in the society and within that limited access to resources, there exists a strong disparity that, most of the women's earnings goes towards nutritional security of the households. However, in the recent past there is a trend, *i.e.*, agricultural engineering with women's perspective is gaining importance. The effective application of agricultural technologies in production has strategic gender implication. The productivity of the labour will be altered, depending on the accessibility for average small and marginal landholders. Most women cannot invest in the technology. Introduction to new technologies in agricultural operation adopted by farm women leading to the mechanisation will reduce the drudgery and improve the efficiency. It is found that, participation of women in farm operations is as high as 95 per cent in Andhra Pradesh to as low as 1.5 per cent in Haryana. About 78 per cent of economically active women are engaged in agriculture compared to 63 per cent of men almost 50 per cent of rural women are classified as agricultural labourers and 37 per cent as cultivators. In such conditions where participation of women in agriculture is as high as 95 per cent the women need to have the précised agricultural tools and implements. Because women workers when engaged in agriculture and allied activities, timeliness and precision play an important role in improving the input use efficiency and to harvest the benefits of limited soil moisture. Timeliness is a function of optimum number of days available for farm operations and number of days required for completion of operation. Precision is influenced by abilities of implements used to meet the soil/crop requirements.

Men and women need to work together in harmony. They are interdependent on each other. In addition to performing household chores women are required to participate fully in crop production. Men have generally done better in the use of agricultural engineering technologies, while women are left behind. It is also felt that, the available agricultural technologies are not women friendly as they are not designed taking into consideration the women's ergonomic measurements. Because, there