The women play a significant and crucial role in agricultural development and allied fields including in the main crop production, livestock production, horticulture, post harvest operations, agro/social forestry, fisheries, etc. (Prasad & Singh 1992). The nature and extent of women’s involvement in agriculture, no doubt, varies greatly from region to region. Even within a region, their involvement varies widely among different ecological sub-zones, farming systems, castes, classes and stages in the family cycle. But regardless of these variations, there is hardly any activity in agricultural production, except ploughing in which women are not actively involved. In some of the farm activities like processing and storage, women predominate so strongly that man workers are numerically insignificant. (Aggarwal 2003) Studies on women in agriculture conducted in India and other developing and underdeveloped countries all point to the conclusion that women contribute far more to agricultural production than has generally been acknowledged.

Therefore, a great need has been felt with consideration of substantiality and equity for developing agricultural research and development programmes which will reflect the role of women as farmers, thus, enabling the women to raise their standard of living and contributing their skills in nation building process. Hence, Indian Council of Agricultural Research (ICAR) has established a network of Krishi Vigyan Kendras (KVK), which was rest upon a solid base of transfer of technology from laboratory to farmer’s field with respect to Agriculture, Horticulture, Animal Husbandry, Floriculture, Bee keeping, Mushroom Cultivation, Broiler Farming and allied subjects to the farmers, farm women, rural youth, school drop outs and extension functionaries to increase their knowledge, enhance their skill and change their attitude in concerned sectors.

As per the recommendations of Mohan Singh Mehta Committee during 1974 the first KVK was established in Pondicherry and by the end of IX Plan, the numbers of KVKs were 276, now 575 KVK are running in India. Gradually working guidelines are prepared to make the K.V.K. as the light house for the rural people. Role of women in agriculture is hugely emphasized in KVK. One of the principal thrust area of KVK is to make farm women participation more in agriculture and allied aspects. KVK is exploring the possibility of entrepreneurship development for rural women through agriculture.

The KVK today has sufficient resources to impart training skills for not only the farmers but also the rural youth. The training schedule typically incorporates the existing needs and problems of the farmers for making a positive impact. The trainings are conducted both at the on-campus and off-campus locations. It invariably emphasizes on providing both the short term as well as long duration courses specifically to impart practical orientation to these courses. The KVK has started the instructional units for not only imparting the skills but also for providing the critical inputs as per the demand and need of the farmers.

Mandate of KVK: The mandate of KVK is technology assessment, refinement and demonstration of technology/products. The activities of KVK include on-farm testing to identify the location specificity of agricultural technologies under various farming systems, frontline demonstrations to establish its production potentials on the farmer’s field, training of farmers to update their knowledge and skills in modern agricultural technologies, and training of extension personnel to orient them in the frontier areas of technology development. As recommended by the committee on Independent Evaluation and Impact Assessment of KVK and QRT, the fourth activity of the KVKs will be to work as resource and knowledge centre of agricultural technology for supporting initiatives of public, private and voluntary sector for improving the agricultural economy of the district.
Scope for Women in Agriculture

Since time immemorial women have significant contribution in almost every aspects of our society. Besides having an anchoring role in the management of their families, women equally participate in different economic activities like crop production, vegetable cultivation, fruit raising, livestock management, pisciculture and other miscellaneous activities such as mushroom cultivation, leaf plate making, bamboo works, badi and papad making etc.

Meeting world food needs in the year 2025 will depend even more than it does now on the capabilities and resources of women. Women are responsible for generating food security for their families in many developing countries, particularly in India. Women not only process, purchase, and prepare food, but they also play a significant role in national agricultural production, producing both food and cash crops. Population growth, urbanization, and the limited potential for increasing production through the expansion of cultivated area imply that, for food needs to be met in the future, yields will have to increase. Agricultural research continues to develop new varieties with higher yields and increased tolerance to unfavorable environmental conditions, but an untapped source of productivity gains could lie in addressing gender disparities in agriculture. The women play in maintaining the three pillars of food security—food production, food access, and food utilization—

Women as Food Producers

The sustainable production of food is the first pillar of food security. Millions of women work as farmers, farm workers, and natural resource managers. In doing so they contribute to national agricultural output, maintenance of the environment, and family food security.

Women as Gatekeepers

The second pillar of food security is making sure that household members, particularly the children, receive an adequate share of the food that is potentially available. Women act as the “gatekeepers” of their households’ food security through the allocation of their own time and income.

Evidence suggests that men spend a higher proportion of their incremental income on goods for their personal consumption. By contrast, women are more likely to purchase goods for their children and for general household consumption.

The third pillar of food security—Food Utilization—means ensuring that the food consumed contributes to good physical and cognitive development. This entails the provision of “care,” namely, paying adequate time and attention to meeting the physical, mental, and social needs of growing children and other household members. Care affects food security in two broad ways: first, through feeding practices such as breast-feeding and the preparation of nutritious foods for weaned infants and others in the family, and second, through health and hygiene practices such as the bathing of children and the washing of hands before food preparation. These caring behaviors are time-intensive. The time constraint is especially acute for female heads of households.

Multi-Dimensional Role of Women

Agriculture: Sowing, transplanting, weeding, irrigation, fertilizer application, plant protection, harvesting, winnowing, storing etc.

Domestic: Cooking, child rearing, water collection, fuel wood gathering, household maintenance etc.

Allied Activities: Cattle management, fodder collection, milking etc.

Women in Decision Making in Agriculture

Women’s role in agricultural operations, animal husbandry and other economically productive activities is very significant. They contribute about 60-70 percent of the labour required for these activities thus playing a pivotal role in sustaining economy. The decision making process is an important segment of every household because it makes implementation of a plan or programme quite easy. In rural areas of the country, both husband and wife are jointly responsible for making decisions on matters like family obligations, specific housing charges and purchase of household articles. However, women’s suggestions are not given due consideration in the decisions pertaining to agricultural sector and important family matters. It is because the majority of women are illiterate, has little time to know about the latest techniques of farming and restricted mobility due to several cultural taboos. At times, even the suggestions of knowledgeable rural women are ignored or are not taken seriously because men consider it disgraceful to accept the decision of women. This is because traditionally men have been major lawmakers of society. Many policies and decisions neglect women and undermine their abilities and roles. The programmes should be developed exclusively for women; to build leadership skills for managing agricultural community based development activities.
Storage

Storage of food crops is critical to achieving food security on both a national and local level by easing price variations and assuring more stable supplies. In India, storage facilities are inadequate and ineffective. It is estimated that one-fourth of all food produced is lost due to spoilage, insects and rodents. Women play an important role in food storage and handling, and as such could benefit from improved methods and facilities. Improvements in traditional systems of storage and food handling could make a major contribution to food security in terms of stabilizing supplies and helping to maintain the nutritional value of stored and processed foods.

Food Preservation

Women perform majority of the work in food processing in developing countries. Women are responsible for supplying their families with food and care, they often have special knowledge of the value and diverse use of plants for nutrition, health and income. Consequently, they are frequently the preservers of traditional knowledge of indigenous plants. Women process and preserve the fruit and vegetable produce from their home gardens and from the forests. Women are universally responsible for preparing food for their households and thus for the nutritional well-being of its members.

Women in Crop Production

Women’s participation in crop production has increased as a result of male migration to urban areas to seek employment. Women are active in all aspects of crop production, expect ploughing in which women are not actively involved. Women are involved in sowing, weeding, plant protection, maintenance, harvesting, food preparation, storage, preservation, treatment and marketing of crops.

Women in Dairy Sector

Rural women, who constitute nearly 77% of the total female population of the country, play an important role in agriculture and animal husbandry besides the household responsibilities. Agarwal (1987) reported that the involvement and participation of rural women were more in animal husbandry than in agriculture. It is true that a nucleus of dairy unit more or less exists as a traditional component in every rural household as a source of draught power or nutritional substance for the family, or a secondary source of income. Venkatachalam (1993) and Sethi (1991) expressed that almost 80-90 per cent of the total work related to cattle care is performed by women. In many places the entire management of livestock, starting from cutting, collection, carrying and chaffing of fodder to feeding and milking, preparation of milk products, cleaning of cattle shed, collection of cowdung to the manure pits, preparation of cowdung cakes and their storage was done by women (Achantha, 1982). The short duration training programmes on dairy practices would be useful to the farm women in acquiring the latest technical knowledge and skills with regard to dairying.

Women in Poultry Production

Poultry production is an occupation that supports the livelihoods of many women, especially the tribal and rural poor in India. Poultry act as financial reserves in crisis situations, and thus reduce vulnerability. The majority of the rural poor still depend on agricultural labour, which does not offer a year round earning opportunity, and livestock rearing supplements their income. Poultry is a source of low cost, high quality food for the family and small cash for women through sale of birds and eggs. Most of the procurement and sale of birds and eggs are done within the village and in local weekly markets.

Drudgery Reduction

Women in agricultural communities work for longer hours compared to men and due to their heavy work load, women often find it difficult to attend training and other extension programmes. Releasing time from these heavy workloads is essential in order to get meaningful participation of women in agricultural technologies. There is a need to understand the daily and seasonal workloads of women farmers and accordingly suggest her for drudgery reducing improved tools and techniques. Promote sowing tools, paddy threshers, winnowers, sprayers, weeder, harvesting tools, cleaner, grader, parboiling units, maize shellers, dal making machines etc.

Role of SHGs in Agriculture Development

The importance of organising women into SHGs is an accepted method of empowerment. SHGs are an effective means through which women can build self-reliance, solidarity and confidence, as well as contribute to the overall development of their families and societies. Belonging to a group provides women with a sense of identity, status and security, and also provides them access to credit and institutional support services which they otherwise would not have had as individuals. SHGs
have bargaining power and the ability to make major decisions for their own development. SHGs need skill to group formation, conflict resolution, leadership development etc, and KVK act as facilitators to help in group formation, training, entrepreneurship development etc. also offer the guidance on rapport building, analysis of social structure, livelihoods and local resources, group formation, group planning, participatory monitoring and participatory evaluation.

Selection of Enterprise

Many of the women trained under different programmes have initiated new enterprises as individuals and as groups and could increase their income substantially from these enterprises. But it is the selection of the right kind of enterprises that is critical. The choice of enterprise depends primarily on the time available with women, their risk taking capacity, cost of inputs, cash flow, markets etc. The capacity of the women groups to understand the likely outcomes of different enterprises and to help them take a decision on what enterprise would be suitable for them, could be developed through appropriate training by KVK.

The woman farmers require activities that are not too time consuming, not drudgeries and will allow them to generate income. With this in mind, the most common income generation activities are listed below -

- purchase/leasing of agricultural land
- improved seeds, bullocks, implements and other inputs for crop production
- purchase of dairy cows, goats and chicks
- tailoring
- paddy processing
- rope making
- fish-net production and repair
- mat weaving
- production of processed milk products
- pottery
- vermi-composting
- nursery raising
- bee-keeping
- food processing (pickle and papad production and sale, curry and spice powder units)
- leaf cup production
- mushroom production
- cultivation of crops
- garment production
- pasture development
- soap powder
- agarbatti making
- operation of flour mill
- production of greeting cards
- consumer store and fair price shops
- selling of cloth, sarees and bangle
- embroidery unit
- stationery production and sale

Policy and Strategies

Women’s participation in agriculture varies widely from different ecological sub-zones, farming systems, castes, classes etc in India. The involvement of women in crop production varies according to the type of crop grown and the cropping systems and the socio-economic status of the family. There is also a need to make distinctions between the involvement of women as agricultural labourers and involvement of women in agricultural operations on their own farm. In relatively prosperous areas where land holdings are large and most of the agricultural operations are mechanised, women play only a marginal role. The women from poorer families work as agricultural labourers irrespective of the community to which they belong. Female labour participation rates are noticeably higher among scheduled caste and scheduled tribal communities (Prameela, 1990). Even though landless women do not have own land, their role in agriculture is important as they are the ones involved in 85% of the agricultural operations in India. Landless women also lease in land for cultivation. Keeping milch animals, small ruminants and backyard poultry is an important source of income for poor farm families and agricultural labourers. Thus, training programmes for women in agriculture should not ignore this group on the basis that they do not have land and do not belong to the category of small and marginal farmers. The problems of tribal women are different from other rural women and they need a totally different approach to overcome some of these constraints.

It is important to recognise the various categories of women farmers that exist and their needs in the agriculture sphere and from there to develop appropriate strategies to assist them e.g. whilst in some parts of India require trained women to reach women farmers, others may require trained women as motivators only, and other areas may need only the agricultural officers to be trained on women’s issues to disseminate
technology to women. Women must be empowered by enhancing their awareness, knowledge, skills and technology. Planners, social welfare agencies and women’s development organisation should provide a rightful place to women. It is necessary to expand networking of support services so that women are freed from some of their gender imposed roles.

Technologies which are labour saving, drudgery reducing, income generating and productivity increasing should be given wide publicity and their use encouraged through pragmatic extension.

**Scenario by 2025**

- The farm women will have farm management skills and capable of taking even complex decisions like shifting from subsistence farming to diversified agriculture, with stand competition from market forces improvement in work or farm efficiency etc.
- Suitable agricultural interventions will enhance production of quality food grains, vegetables and fruits. This will help in improving per capita availability of food, which will, in turn, impart food and nutritional security.
- Improved access to credit, establishment of milk cooperative and marketing will enhance the managerial abilities of farm women in dairying.
- Women will act as “vaccinators” and as manufacturers in low cost dairy and poultry feed formulations at the village level.
- Women will play a significant role in livestock management and production and will be the member of dairy cooperatives.
- Availability of time saving, work ease and efficient effective implements and tools will ease out the drudgery and enhance the working efficiency of farm women and this will leave much time for other work and income generating enterprises.
- Greater awareness will bring in reduction in malnutrition in rural areas through fortification of conventional foods with nutrient rich produce such as soybean.
- Suitable gender-specific technologies will empower the farm women.
- Availability of safe and pure drinking water will reduce the incidence of diseases which leads to malnutrition, save money and increase the working efficiency.
- Reduce losses of produce by improved storage structures and technologies will raise income of the farm women.
- Lastly, it is expected that empowerment of rural women will also facilitate in achieving the Vision 2025 of the country in terms of better livelihood support, poverty reduction, building food and nutritional security for the family and a gender balanced healthy and prosperous society.

**REFERENCES**