

Enhancing Employment Opportunities for Women through Diversification of Mountain Agriculture

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Introduction

The trend of male off-farm employment and migration to cities and overseas has increased the responsibility of women in agricultural production. Women in mountain communities have had secondary roles owing to cultural and economic conditions. Women's economic development can be brought about through creating income-generating employment opportunities. This paper proposes some technologies that would suit women by improving their health and nutritional standards while offering quick economic results.

Some Suitable Technologies

Apiculture

Apiculture can be started as a part-time occupation that has many benefits. Bees pollinate cultivated crops and wild plants. Honey generates income. Beeswax generates income. Beekeeping is possible even with limited resources. Beekeeping does not use up land needed for crops. Nectar and pollen are not used by other livestock; only bees harvest these resources. Other local traders benefit by making hives and equipment, and from using and selling the product. Beekeepers have a financial reason to conserve the environment, ensuring that flowers are available and bees are protected. Beekeeping can be done in leisure time. Bee-keeping generates income without destroying habitat. Bees help create and maintain diversity of plants. Finally, honeybees contribute towards increased production of insect-pollinated crops and towards ensuring the continuity and existence of flowering plants in all kinds of fields, including marginal wastelands.

Solar fruit and vegetable dehydration systems

A wide range of fruits and vegetables is available in mountain areas all year round. A considerable portion of these products gets spoiled before reaching consumers, owing to lack of refrigerated transport and cold storage facilities. This causes serious problems of wastage (20-40%) and post-harvest losses. These losses could be minimised if the surplus fruits and vegetables were converted into non-perishable dehydrated products, which can be used or sold during the off-season to fetch better prices. Low cost solar driers can be used.

Cheese and yoghurt

Many mountain farmers who own dairy animals get sufficient milk to meet their day-to-day requirements. The surplus is mostly used to make ghee or 'khoa' (a fatty milk product). These have high cholesterol contents. Cheese has less cholesterol and is an excellent source of nutrition, particularly for children. There is a considerable scope to process milk for cheese production in mountain areas of Pakistan, and it has the potential to generate income through low-level technology.

Sericulture

Women can rear silkworms quite easily. This remunerative enterprise can be set up on a commercial scale as it is closely integrated with the agricultural system. The valuable timber and branches for basket making or fuelwood would provide a good market return.

It has been estimated that one ounce of silk seed can produce 17 to 19 kg of dried cocoons in six weeks, which would give an income of about US\$38 (Ahmad and Muzaffar 1993). Expansion of this industry has a potential for economic uplift of women and would also save foreign exchange.

Poultry

Poultry farming offers the quickest, most efficient, and most economical source of good quality protein. Indigenous birds are reared as backyard poultry. They subsist on waste grains or are fed with small quantities of cereal and kitchen waste. Their production is almost entirely a net gain.

Several breeds and crosses of chickens are suitable for poultry farming on a small scale. Cross breeding of local chicken with meat poultry breeds such as Rhode Island Red holds good promise of producing a dual-purpose breed, with improved pure breeds for higher body-weight, egg size, and fecundity of the fowl. Commercial poultry production can be taken up in mountain areas around big cities to get better returns.

Aquaculture

Mountain fishing families are generally poor. They fish both for family consumption and for sale. Small-scale trout farms or hatcheries can be set up on modern lines with arrangements for handling, processing, smoking, salting, drying, and packing.

Raising fish in cages is relatively simple and has several advantages over raising fish in an open pond (Rab and Afzal 1986). Water that is already present in an ordinary farm pond, lake, reservoir, river, or stream can be used, and there are many such resources available in the mountains. Cage culture permits more intensive utilisation of water resources with a low capital expenditure. Recent developments have made cage culture more reliable and easier to operate, especially for women. A multitude of fish products like fish crackers, fish balls, paste, sauce, and dried jellyfish can be produced in small processing establishments.

Mushrooms

Production of mushrooms can become an important source of employment, income, and foreign exchange that would represent a diversification of existing agriculture. In view of its richness in protein; low carbohydrate; and also because it is extremely good for patients with diabetes, hypertension, and cardiovascular diseases, mushroom production is required on a large scale. Furthermore, there is a great demand for mushrooms in Pakistan, and this is expected to increase rapidly in the future as it has in other countries.

There is a need to establish a mushroom research laboratory and a training centre for mushroom cultivation, and for dissemination of technology to develop technical know-how among women. This would also involve further studies on the improvement of mushroom varieties and cultivation practices for higher yields. Women and men from small landholding and landless families can easily grow this unconventional crop to add to their income and to supplement diets for improved general health.

Kitchen gardening and floriculture

Small kitchen gardening clubs can be established in mountain areas for growing and selling seasonal and off-season vegetable crops. There is a need to involve more women in small-scale vegetable production, preservation, preparation of jam, jellies, pickles, and other vegetables, and fruit products. Similarly, floriculture is another promising technology that can yield a high income.

Water conservation devices

Women spend much time and labour in fetching water and other such activities. It is necessary that appropriate time and labour saving technologies, especially relating to energy and water, be introduced to reduce the excessive burden on women. In Australia, water tanks with an average capacity of three thousand gallons [13,600 l, ed.] are used to store rainwater coming down through small pipes along the edges of the roofs. Sometimes underground water tanks are used.

Information technology training

Information technology can be another discipline for women, especially those restrained by physical disability and not able to participate in other activities. They can work out useful information on a particular variety, yield, quality, and marketing prospects of various agricultural produce of the mountains.

Conclusions

The execution of a multi-disciplinary project based on integrated agricultural technologies for commodity farming system would provide nutritional, economic, and ecological security to mountain communities and the national economy. There is a great scope and potential for increasing income both from on-farm and off-farm activities by encouraging small enterprises. Skill development and training efforts have to be made to develop the capacity of women to undertake small businesses and enterprises, and adopt an integrated approach for the productivity of their farms. The environmentally sound technologies can also help stop ecological degradation and contribute to the natural balance of our mountain forests.

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