New Approaches for Reducing Poverty among Farming Communities in Balochistan, Pakistan

Z.A. Khan
Agriculture Balochistan, Khush-hali Associates, Quetta

Introduction

Balochistan is the largest province of Pakistan, covering 43% of the country. Balochistan has a variety of ecological zones comprising temperate, sub-temperate, subtropical, Mediterranean arid plains, and a coastal belt. The coastal belt is dry and desert. Winter is often mild and summers hot, with temperatures ranging from 40 to 50°C in June. Rainfall in the coastal belt is less than 80 mm per annum. Snow falls in the north and north-eastern districts.

Due to the diverse climate, a wide range of crops is grown in one part or another of the province. Both irrigated and dry farming are practised. Water is the most limiting factor. Crops are grown by direct precipitation, by harnessing and exploiting floodwaters, and by using underground and surface water. Growing crops on unirrigated lands depends on rain and snowfall. The actual cropped area is reduced by the limited supplies of water for irrigation.

Strategies for Improving Livelihoods

To improve the livelihoods of people in mountainous areas in particular and Balochistan in general, a multi-pronged approach is required. The approaches are described as follows.

Community organisation

Community organisation needs to be stepped up on a massive scale. It will serve as a foundation for future sustainable activities to improve the socioeconomic activity of the area. The present scale of activities in this area is rather small. Through community organisations, further steps like creation of awareness, capacity building by providing credit facilities, introduction of technology, and arranging training, can be carried out.

Awareness creation

Creating awareness is the first tool towards bringing about change. Awareness of phyto-sanitary issues, health hazards, low output, poor quality and quantity of production, poor management of resources, illiteracy, and so on are to be taken into consideration on a priority basis. Once a community becomes aware of the difficulties it faces and reacts to them, change comes easily.

Capacity building

Capacity building is a prerequisite for initiating any development or improvement activity in any society. Capacities of the communities may be built through training and extending

credit. Both short- and long-term credits for viable small-scale industries, education, and health care are needed. For efficient use of credit, technical backstopping is essential.

Human resource development

Developing human resources is another prerequisite for bringing change to a developing society. Untrained people will not be able to understand, grasp, or appreciate technology. Therefore, a human resource development programme has to be launched to develop skilled professionals and experts in various trades.

Introduction of new technologies

Introducing new technologies brings a real and visible change in society, and greater emphasis has to be laid on this area. Use of micro-irrigation systems, solar and wind energy, application of isomers for longer retention of water in the root zone, and use of gypsum to cure alkaline soils are some examples. Similarly, planting dwarf rootstocks, practicing integrated pest management programmes, using biological methods for controlling insect pests and diseases, and growing chemical-free vegetables and fruits are other examples of potentially useful technologies.

Cloud seeding

Cloud seeding can be highly beneficial in arid areas. But this activity must be implemented either by the central government or a large organisation. Successful use of the technology depends on accuracy and perfection and it is beyond the reach of poor communities.

New Approaches

Apart from the conventional and traditional methods currently in vogue, new creative approaches should be considered. The following new approaches have been suggested as useful for reducing poverty among farming communities.

Initiation of 'second agriculture'

Second agriculture refers to growing crops and trees with several objectives in mind. These can include environmental improvement, rehabilitation of ecosystems, soil conservation, increasing soil fertility, encouraging biodiversity, developing by-products for human and livestock use. A classic example is the seabuckthorn plant, which has all the above uses although nothing from the plant is directly edible. Seabuckthorn resists high temperatures up to 50 °C and low temperatures down to -40 °C, tolerates drought, binds soil due to its vigorous root system, protects against erosion, adds to soil fertility and increases its water holding capacity, encourages soil cover and secondary vegetation on the soil. It forms a good canopy, wood is available for fuel, and sheep, goat, and cattle eat its leaves and tender shoots. It attracts wildlife, encourages birds to nest, improves the environment, and increases precipitation. Its fruit and seeds are used for making oils, cosmetics, confectioneries, food products, medicines, alcohol, jams, syrups, and candies. In China more than 200 seabuckthorn by-products are made and sold on a commercial scale.

Use of appropriate technology

Use of cheap power from wind and solar energy for domestic and commercial use can revolutionise the economy of inhabitants of this region, as could the use of cheap material as fuel (e.g., coal dust can replace fuelwood and kerosene in villages). Biogas is yet another cheap source of fuel for lighting and cooking.

Food processing, making wool and cotton products, tanning hides and skins, wood working, pottery making, mat and rope making, agricultural tools, embroidery, and so on are some of the cottage industries that may improve household incomes. Small scale financing, skill development, and marketing regulation are required. Poultry farming, quail farming, fish farming, kitchen gardening, apiculture, and sericulture are yet other avenues that can revolutionise the economy of the rural poor.

Many appropriate technologies prevalent in the province can be improved, developed, industrialised, and popularised to promote farm and household incomes. The list includes water management, floodwater harvesting, floodwater silt collection, protection of spurs to prevent erosion, use of medicinal plants and herbs, plant products, animal products like landi, khurud and butter, dry fruit processing, orchard management, cottage products, nursery raising, and planting four winged salt-bush for fodder for small ruminants. Cottage industries like carpet weaving and palm leaf products, mushroom culture, and so on can be promoted. All these technologies need streamlining, development on improved lines, and conversion into regular cottage industries.

Another important practice is using saline water, particularly sea-water, for growing salicornia, an edible oil crop that can be grown on water having 55,000 ppm of salt. Oil is extracted from its seed. Its fresh plant tips can be eaten as salad, and its by-products can support many industries. These can also be grown on kallar soils and on brackish water.

Managing Coastal Regions and Deserts

Coastal regions can be managed by planting salicornia, seabuckthorn, mesquite (*Prosopis juliflora*), coconuts, and oil palms. A mass scale plantation programme will be needed. These crops have been successfully grown on coastal lands on a trial basis. Similarly, in deserts mesquite, jujuba (*Simmondsia chinensics*), timarex (*Tamarix Aphylla*), broom (*Leptadinia para-technica*), and other plantations will stabilise sand dunes, and provide opportunities to local people to develop industries such as making wettles, berries for fine oil production, forage for animals, and so on. They are also environmentally friendly plants, helpful in stabilising sand dunes, improving soils, and promoting wildlife.

The biggest threat to biodiversity comes from cutting down forests, particularly those of juniper, chilghoza (pine seed), and shina (*Pistachio khinjak*), and bushes and shrubs for fuel purposes. The situation is aggravated during periods of drought, when animals even eat unpalatable grasses and bushes. Therefore, there is a dire need to protect this flora by providing alternate fuel sources that are cheap and easily available. Programmes should be developed to (a) develop pastures and ranges, (b) provide alternate feed such as molasses blocks, and (c) limit animal numbers to the grazing capacity of the resources and exercise

controlled grazing and stall feeding. A strong reforestation programme should also be launched as an ongoing practice.

Sustainable Commercial Use of Herbs and Plants

A number of herbs and plants have enormous medicinal or industrial value; these include ephedra, hermal, paneer (*Withnania Coagulaus*), thyme, caravy, neem, true barberry (*Barburis vulgaris*), maurai (*Zizyphora climopodiodes*), and dwarf palm (*Nanuorphos ritebieana*). Ephedra was once widely used but has been replaced by synthetics. However, its use can be revived with the better technical inputs now at hand. Similarly, juniper berries can be used for oil and scent. Use of hermal is so far limited to smoking, but it can be a good source of other by-products like edible oil, as it contains a fairly good oil percentage in its seed.

Conclusion

Having glanced through the avenues and potentials available in the Hindu Kush-Himalayan Region, it is believed that the plight of this region can be turned into a most prosperous zone by using the resources properly in the light of new advancements in technology and by adopting new approaches.