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Farming systems of Rajasthan and influence of modern techniques of farming with special reference of Southern-East Rajasthan

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Abstract

The present study was undertaken to access the satisfaction level of Farmer's using modern techniques of farming of Southern-East Rajasthan. This zone covers Bhilwara, Bundi, Kota, Baran & Jhalawar, Chittorgarh and Rajsamand of Rajasthan. During the study, the farmers from these districts would be identified for their farming techniques and their agriculture productions using traditional techniques and modern techniques. This assessment would act as a milestone to evaluate the production from their agriculture and level of their satisfaction for getting profits.

Keywords: Southern-east rajasthan, farmers, traditional techniques, modern techniques

1. Introduction

Indian farming is based on cereals, millets, pulses and oilseed crops (mustard, soyabean and groundnut), which do not fetch remunerative prices to the farmers; there has been a dramatic shift in the farming systems from the traditional crops to the high return commercial crops. These include horticultural and medicinal-cum-aromatic plants. Nowadays, the resurgence of interest in herbal products has accelerated the growth of medicinal and aromatic plants based industries in the country. The use of medicinal and aromatic plants was earlier confined to the production of indigenous medicines based on *Ayurveda*, *Unani* and *Siddha* Therapies, but today, other industries, such as cosmetics, toiletries, confectioneries, perfumeries, etc., are also exploiting the goodness of medicinal and aromatic plants. India is endowed with a rich wealth of medicinal plants. Most of these continue to be gathered as wild plants to meet the demand of the medical profession. Despite the rich heritage of knowledge on the use of plants drug, little attention has so far been paid to grow them as field crops in the country.

Today, there is an increasing global interest and commercial demand of plants based raw materials for the manufacture of drugs, pharmaceuticals, perfumery, cosmetics and aroma compounds and used in food flavours and fragrances. It has been estimated that India is endowed with about 47000 species of plants and ranks 8th in the world biodiversity, of these, 8000 species are known to be medicinal. About 800 species are used by industries, of which approximately 25 percent are presently cultivated. Similarly, 1300 plant species are known to contain aroma but only 2 percent is cultivated. Thus, efforts are being made to introduce many of these plants into Indian agriculture and studies on the cultivation practices are being undertaken for those plants which are found suitable and remunerative for commercial cultivation. The average annual foreign trade accounts for a little over 5 per cent of the World trade in these commodities. India at present exports herbal materials and medicines to the tune of Rs. 446 crore only, while it has been estimated that this can be raised to Rs. 3000 crore plus. In view of the innate Indian strengths which include diverse ecosystem, technical and farming capacities and a strong manufacturing sector, the medicinal and aromatic plants sector can become a huge export opportunity after fulfilling the domestic needs ^[1]. India also exports crude drugs, mainly to developed countries, viz. USA, Germany, France, U.K. and Japan, who share between them 75 to 80% of the total export of crude drugs from India ^[2]. Global demand for herbal medicines has increased dramatically during the last ten years ^[3].

Man has been in the process of exploiting several lesser known plant species to meet his ever-increasing demand for food, fiber and oil etc. National oilseeds and vegetable oil development board (NOVOD) is exploring and augmenting the potential of tree borne oilseeds in the country by undertaking activities, like nursery raising, plantation, installation of pre-processing and processing facilities, capacity building and need based research etc. State medicinal plant Board has initiated R&D programmes on AJORP, Jatropha and Karanja for bio-diesel

production by making networking of 25 institutions in the entire country with the desired objectives ^[4].

2. Review of literature

The Southern Africa region has experienced more than its fair share of problems in recent years. Just when it seemed that the hardships wrought by the devastating cycle of droughts and floods of 2000 to 2002 were a thing of the past, other problems emerged. At one level, there have been the weak and often erratic governance mechanisms and political crises in some countries of the region, leading to severe disruptions in agricultural production to the point that supplies and markets have virtually disappeared. At another level, socio-cultural rigidities have often militated against the adoption of efficient farming practices, resulting in sub-optimal choices that lock smallholders into a low equilibrium trap. In the face of the disappearing supplies and missing markets, these have engendered hyper-inflationary trends of a magnitude unknown anywhere else in the World ^[5]. But in the midst of all this apparent dreariness, cases are emerging from which immense lessons can be drawn. This book assembles a collection of research papers based on studies completed in 2008 and 2009 in Southern Africa that examine various dimensions of the institutional constraints small farmers are facing in the region and how they are going about dealing with them. The papers draw from these diverse and polar experiences and present some theoretical and practical insights that should form the basis for more in-depth, country-level, sector-specific analyses, focusing mainly on citrus, horticultures, cotton and livestock. The thematic issues of income inequality, land reform, natural resource management and value chain governance and chain choice, are covered in this book and are expected to be of interest for a wide constituency, including researchers, development practitioners, rural animators, and policy makers ^[5]. Science and technology are cultural phenomena. Expert knowledge is generated amid the conflicts of a society and in turn supplies fuel to fire yet further change and new clashes. This essay on economic entomology is a case study on how cultural events and forces affected the creation of scientific and technical knowledge. The time period emphasized is 1945 to 1980 ^[6]. The Scientists reported that the general hospitability offered by the staff general by A TIC topped with highest level of satisfaction (Score: 91.11). The A TIC in website scored: 88.89 level of satisfaction among the facilities and other services offered in ATIC, museum attains highest satisfaction score of 87.78 followed by Audio-visual hall and conference hall (score 81. 11 each). ATIC laboratory got a least satisfaction level of 42.22, which necessitates the requirement of improving the facilities by equipping with essential items to develop it as a fully functional laboratory ^[7]. 71%, 16.50% and 12.50% adopters are medium, low and high knowledge, respectively. It was further observed that the 67% tribal and 75% non-tribal are medium level of knowledge about jatropha cultivation ^[8]. Like other West African cotton producers, Burkina Faso's cotton strategy has traditionally involved substantial government intervention in both input and output markets. Despite some notable successes, this state-led strategy became widely criticized by the late 1980s for inefficiencies, inequities, and for inducing macro-economic instability. However, Burkina Faso rejected both the status quo and wholesale liberalization paths, and instead embarked on a more gradual and sequenced reform path that included strengthening farmers' groups before partially liberalizing input and output markets. Although these reforms have

coincided with Burkina Faso becoming the largest cotton exporter in Africa, this paper more rigorously assesses the success of these reforms through both descriptive evidence and a counterfactual analysis of what might have happened if the pre-reform status quo had continued. We conclude that the reforms were highly successful in terms of production growth, job creation, and in improving nutrition and poverty reduction among cotton producers. However, we also consider important caveats. Partly by design, the reforms were less successful at raising yields, stimulating development in the broader economy, and addressing environmental concerns. The more damaging criticism that the reforms have proved financially unsustainable is also considered. Without being apologist, we argue that the new institutions created under the cotton reforms at least provide a deliberative forum for successfully addressing the problem. A key challenge for the near future will be to ensure that the key institutions in this forum-particularly the farmers union and the former parastatal-are made more accountable to farmers and other key actors in the cotton sector ^[9]. The other workers found that among beneficiaries 75.38% had favourable, 10.76% less favourable, 13.84% more favourable attitude of fanners toward "school on AIR" programme. It is inferred from the study that majority of the farmers respondents were satisfied with programme expressed favourable attitude towards, "school on AIR" programme on modern rapeseed mustard technologies run by NRCRM ^[10].

3. Results and Discussion

3.1 Types of farming in Rajasthan

Agriculture is not only growing food for people and animals but also growing other things like flowers and nursery plants, manure or dung, animal hides (skins or furs), leather, animals, fungi, fibers (cotton, wool, hemp, and flax), biofuels, and drugs (biopharmaceuticals, *Marijuana*, *Opium*). Many people still live by subsistence agriculture, on a small farm. They can only grow enough food to feed the farmer, his family, and his animals. The yield is the amount of food grown on a given amount of land, and it is often low. This is because subsistence farmers are generally less educated, and they have less money to buy equipment. Drought and other problems sometimes cause famines. Where yields are low, deforestation can provide new land to grow more food. This provides more nutrition for the farmer's family but can be bad for the country and the surrounding environment over many years. In rich countries, farms are often fewer and larger. During the 20th century they have become more productive because farmers are able to grow better varieties of plants, use more fertilizer, use more water, and more easily control weeds and pests. Many farms also use machines, so fewer people can farm more land. There are fewer farmers in rich countries, but the farmers are able to grow more. This kind of intensive agriculture comes with its own set of problems. Farmers use a lot of chemical fertilizers, pesticides (chemicals that kill bugs), and herbicides (chemicals that kill weeds). These chemicals can pollute the soil or water. They can also create bugs and weeds that are more resistant to the chemicals, causing outbreaks of these pests. The soil can be damaged by erosion (Blowing or washing away), salt buildup, or loss of structure. Irrigation (Adding water from rivers) can pollute water and lower the water table. These problems have all got solutions, and modern young farmers usually have a good technical education.

- Farming may be defined as the activity or business of growing crops and raising livestock.

- A tract of land cultivated for the purpose of agricultural production.
- Farming is growing crops or keeping animals by people for food and raw materials. Farming is a part of agriculture.

3.2 Modernization of farming system

Today, Indian agriculture finds itself at the crossroads. To make agriculture successful and profitable, proper thrust should be given to the improvement of the condition of marginal and small farmers. The green revolution promised much. But today it's under controversies. It is being alleged that it has caused land degradation due to overuse of chemicals, drying aquifers and vanishing biodiversity. The keyword today is "gene revolution" that includes genetic engineering. In fact, Organic farming is much in vogue today because it is practiced without factory made chemicals such as fertilisers and pesticides. Hence, it does not affect the environment in a negative manner. Low and highly unstable crop production and rapidly falling groundwater levels are the major challenges to be tackled in semi-arid rainfed areas. In south-eastern Rajasthan, high intensity and erratic rains associated with poor soil permeability create excessive runoff and severe erosion hazards. In this region, through Conservation Bench Terrace (CBT), farm-rainwater harvesting can be done.

3.3 Advantages of modern techniques of farming

Main advantages of modern agricultural technology lie in its predictability. The technology makes sure that the farmers have crops to harvest and sell. There is very less chance of the crop being lost to environmental factors like drought, floods, plant diseases or low yield. The modern agricultural technology assures that:-

1. Agricultural sector gains profit every harvest season with very less crop losses. Increase in production of crops and agriculture.
2. The productivity will be enhanced.
3. If the production and outcome would be better the living standards of farmers will also be improved.

By using the modern techniques, the Good quality of produce would be better. Ultimately the growth of the economy of the country will improve.

4. Conclusion

As the farmers of the Southern-East of Rajasthan used to implement the traditional method of agriculture and getting limited production of the crops. Since the lot of government schemes and support is coming to farmers and modernization in agro-techniques are also in the practice. When the farmers may adopt these modern techniques of agriculture including sustainable agriculture models, organic farming and mechanical instruments for agriculture definitely the production of the crops will be improved and farmers will be benefitted and their income will be increased. The living standard of the farmers and their families will be better and the satisfaction level would be increased through this way.

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