

## DIVERSIFICATION IN AGRICULTURE: OPPORTUNITIES AND STRATEGIES IN INDIA

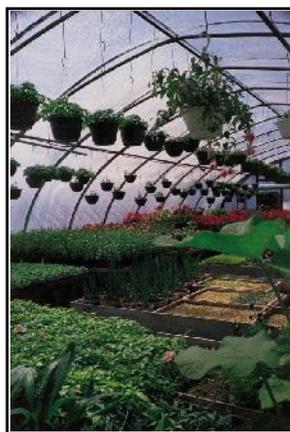
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Diversification in agriculture refers to a paradigm shift from one crop to another crop, bringing out a desirable change in the existing crop pattern towards more balanced cropping system to meet even increasing demand for cereals, pulses, oilseeds, fibres, fodder and grasses, fuel etc. but now days, crop diversification in agriculture new meaning to increase the total crop productivity in terms of quality, quantity and monetary values under agro-climatic

situations of the country. It aims to improve soil health and agro-ecosystem. Crop diversification takes into account of the economic returns from value added crops. It is different from the concept of multiple cropping in which the cropping is in a given place of land in a given period of time is taken into account, with globalization of market.

**Approaches of crop diversification:** There are two approaches of crop



diversification in agriculture.

– **Horizontal diversification:** It is a common and main approach of crop diversification in agriculture. Here, the diversification takes place through crop intensification, by adding main crops to the existing cropping systems for improving the productivity of crop systems

– **Vertical diversification:** In vertical diversification, various downstream activities are undertaken. Here, the existing economic produce of different crops is refined and manufactured products and additional values to the produce, such as use of fruits for canned juices, syrups, jams, jellies, pickles etc.

### Outcome of several interactive effects:

The crop diversification is the outcome of several interactive effects of many factors as given below:

- Resources-related factors covering irrigation, rainfall and soil fertility.
- Technology-related factors covering seeds, fertilizers and water technologies, but also those related to marketing, storage and agro-processing, etc.
- Household-related factors covering food, fodder

and fuel as well as investment capacity of farm people.

– Price-related factors covering output and input prices as well as trade policies and other economic policies that affect the prices either directly or indirectly.

– Institutional and infrastructure-related factors covering farm size and tenancy arrangements, research, location and marketing systems and government regulating policies, etc.

All these five related factors are interrelated. The adoption of crop technologies is influenced not only resources-related factors but also by institutional and infrastructure factors in the location-specific programs with farm area and crop composition.

### Drivers of diversification:

Diversification can be response to both opportunities and threats:

#### Opportunities:

– **Changing consumer demand:** As consumer in developing countries become richer, food consumption patterns change noticeably. People move away from a diet based on staples to one with a greater content of animal products (meat, eggs and dairy) and fruits and vegetables. In turn, more dynamic farmers are able to diversify to meet these needs.

– **Changing demographics:** Rapid urbanization in developing countries has an impact on consumption patterns. Moreover, a smaller number of farmers, in percentage terms at least, have to supply a larger number of consumers. While this may not imply diversification it does require adaptation to new farming techniques to meet the higher level of demand.

– **Export potential:** Developing country farmers have had considerable success by diversifying into crops that can meet export market demand. While concern about food miles, as well as the cost of complying with supermarket certification requirement such as for Global GAP may jeopardize this success in the long run, there remains much potential to diversify to meet export markets.

– **Adding value:** The pattern witnessed in the West, and now becoming widespread in developing countries, is for consumers to devote less and less time to food preparation. They increasingly require ready-prepared meals and labour saving packaging, such as pre-

cur salads. This provides the opportunity for farmers to diversify into value addition, particularly in countries where supermarkets play a major role in retailing.

– **Changing marketing opportunities:** The changing of government policies that control the way in which farmers can link to markets can open up new diversification possibilities. For example, in India policy changes to remove the monopoly of state "regulated markets" to handle all transaction made it possible for farmers to establish direct contracts with buyers for new products.

– **Improving nutrition:** Diversifying from the monoculture of traditional staples can have important nutritional benefits for farmers in developing countries.

#### **Threats:**

– **Urbanization:** This is both an opportunity and a threat, in that the expansion of cities places pressure on land resources and puts up the value of the land. If farmers are to remain on the land they need to generate greater income from that land than they could by growing basic staples. This fact, and the proximity of markets, explains why farmers close to urban areas tend to diversify into high-value crops.

– **Risk:** Farmers face risk from bad weather and from fluctuating prices. Diversification is a logical response to both. For example, some crops are more drought resistant than others, but may offer poorer economic returns. A diversified portfolio of products should ensure that farmers don't suffer complete ruin when the weather is bad. Similarly, diversification can manage price risk, on the assumption that all products will suffer low prices at the same time. In fact, farmers often do the opposite of diversification by planting products that have a high price in one year, only to see the price collapse in the next, as explained by the cobweb theory.

– **External threats:** Farmers who are dependent on exports run the risk that conditions will change in their market, not because of a change in consumer demand but because of policy changes.

– **Domestic policy threats:** Agriculture production is sometimes undertaken as a consequences of government subsidies rather than because it is inherently profitable. The reduction or removal of those subsidies, whether direct or indirect, can have a major impact on farmers and provide a significant incentive for diversification or, in some cases, for returning to production of crops grown prior to

the introduction of subsidies.

– **Climate change:** The type of crops that can be grown is affected by changes in temperature and the length of the growing season. Climate change could also modify the availability of water for crop production. Farmers in several countries, including Canada, India, Kenya, Mozambique and Sri Lanka have already initiated diversification as a response to climate change

#### **Future strategies:**

Crop diversification in agriculture in India is taking place in one or the other form, mostly due to market forces and occasionally due to domestic needs. For scientifically land and water use, there is immediate need to emphasize some facts as noted below:

– Processing of farm produce into value added products offers scope for employment in non-farm works such as distillation of active ingredients from medicinal and aromatic plants (herbal products), scope of industrialization in agriculture for sugar, paper board manufacturing, etc. to increase employment in rural areas.

– There is need to generate diversified packages for diverse farming situations under various socio-economic conditions, domestic needs, market infrastructure, input supply, etc.

– The research on crop diversification should essentially be taken up in farmer participatory mode in which a multi-disciplinary team of scientist should

involve the farmer's right from planting till arriving at conclusions.

– A concept of sustainable productivity for each unit of land and water through crop diversification needs to be fostered.

– There is need for promoting co-operatives in rural areas to solve micro-level and location-specific problems.

– Major thrust should be given on horticulture and animal husbandry for having a high and expanding export market.

– Major strengthening of food processing and value addition industry in rural areas should be entrusted to increase export avenues of various agricultural commodities produced under diversified farming to promote/provide employment to rural youth.

– There is need to develop rural infrastructure such



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