AGRICULTURAL POLICY IN HIMACHAL PRADESH: A POLICY MATRIX IN A FEDERAL SYSTEM (PART –II)

RANVEER SINGH
M.L. SHARMA
C. S. VAIDYA

AGRO-ECONOMIC RESEARCH CENTRE
HIMACHAL PRADESH UNIVERSITY
SHIMLA-171005 (INDIA)

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STUDY TEAM

Project Leaders	**Dr. Ranveer Singh** **Dr. M.L. Sharma** **Dr. C.S. Vaidya**
Project Associates	**Sh. N.K. Sharma** **Sh. Khem Raj Sharma**
Word Processing	**Mrs. Meera Verma**
Photocoping	**Sh. Amer Chand**

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EXECUTIVE SUMMARY

India's Involvement with WTO

The Government of India adopted a new economic policy in July 1991 with a view to improving India's competitiveness in the global market. By then many countries had already initiated structural changes in their respective economics. The main features of these changes were (i) privatization of public sector, (ii) market friendliness and liberalizing the economy through deregulation. Since then India too has to respond to the changing global economic order for sustained economic growth. The new economic policy being implemented since, 1991 has progressively started posing new challenges in all sectors of the economy and is also opening up new opportunities in the national and international markets.

WTO and Indian Agriculture

The decade of nineties, besides the evolution of WTO, had another significance Indian context that India emerged as one of the ten fastest growing economies in the world. India's future strategies aim at further acceleration of economic growth to the tune of 8 per cent in the Tenth Five Year Plan implying ever higher need of acquiring trade opportunities. India does not have competitive advantage in many agricultural commodities on account of high cost of production mainly because of low level of productivity. The poor infrastructure in terms of roads, transport and processing infrastructure is another limitation to face the external challenges created by WTO. International prices are highly volatile and India lacks in market intelligence to plan its exports and imports accordingly. Many Indian products are often of poor quality and do not meet the international export standards. India has diverse agro-climatic conditions for production of a number of commodities. These include fruits, vegetables, livestock products and spices, which can emerge India an important player in the world market provided concerted efforts are made to convert these challenges into opportunities.

Status of Commercial Crops in Himachal Pradesh

In Himachal Pradesh, the commercial activities identified in agricultural sector mainly include production of fruits and vegetables (horticultural crops). Though the share of these crops in total cropped area of the State is only about 7.39 per cent yet due to high value crops their contribution to total agricultural sector income is quite significant. During 1995-96 about 28 per cent of State income has been contributed by agriculture sector alone.

In Himachal Pradesh owing to favourable agro-climatic conditions and natural resource base, the production of temperate fruits especially of apple and fresh vegetables became popular on all categories of farms. Since both these crop-groups require small land base, the adoption of these crops has registered a great success, particularly among the small sizes of land-owing families.

Himachal's Agriculture Sector and WTO

In case of relationship between state agriculture and WTO the Himachal Pradesh horticulture crops such as, Apple, potato, Mushroom, Hops, garlic, ginger and floriculture products etc. have substantial export potential to earn valuable foreign exchange. The key determinants for exports are (i) export surplus, (ii) quality production based on phyto-sanitary standards, (iii) comparative economic advantage, (iv) infrastructure support and consistent export policy. For keeping pace with WTO the state agriculture needed to frame a agricultural policy so that threats of WTO may be tackled.

Therefore the micro-level planning envisages a distinct multi-sectoral package of area-specific investment proposals and institutional arrangements arising from a detailed examination of the resources, problems and potential of local areas. It would be a step towards participatory planning dealing with local needs on a

scientific basis. Keeping in view the above-stated background and considerations, the present study focuses on the following specific themes in terms of objectives.

Objectives of the study

1. To bring out the state's concerns as well as to record the state's view on the changing economic situation due to India's involvement with the WTO.

2. To document the State's initiatives to meet the problems and constraints arising out of India's WTO commitments and review in brief the effectiveness of government interventions in the form of technology adoption, institutional adaptation, price policy changes (e.g., through changes in tax and subsidy regimes) and legal policy changes undertaken so far.

3. To discuss with the important stakeholders (as identified above) the requirements for formulation of a policy document at the state level, in response to the country's growing concerns at home and abroad (i.e., in response to challenges arising from WTO or otherwise).

4. To elaborate on the initiatives taken to meet the challenge of diversification, technology, resource management and price policy at the state level (whether in response to WTO or otherwise).

5. To assemble these views in the form of a meaningful policy requirement matrix, relating problems/issues to action points suggested/recommended and also trying to spell out the agencies, which should undertake such actions.

Methodology

The agricultural policy in the state especially in the context of WTO has been analysed for apple crop. This choice has been based on the fact that apple contributed about 40 percent area of the total fruit and 82 per cent in the total fruit production Himachal Pradesh is truly the 'Apple State of India', next only to the Jammu and Kashmir state both in terms of area and production of the crop. The production of apple is mainly concentrated in the districts of Shimla and Kullu. It was therefore consider pertinent that the various stakeholders, whose responses will farm the backbone of the study should be drawn from these two districts.

POLICY MATRIX FOR AGRICULTURAL DEVELOPMENT IN THE ERA OF WTO

Likely Impact of WTO Clauses on the Farmers

Important WTO clauses	Possible favourable effects	Possible unfavourable effects
1. Agreements on Agriculture (AOA):		
(a) Domestic support	The possible favourable effects emerge from Green Box measures where in the Govt. can compensate the farmers from natural disasters and undertake the programmes like income insurance, crop insurance and income safety net programmes under the special and differential treatment for developing countries, the investment subsidy and agricultural input services available to low income groups are not to be counted in Aggregate Measure of Support (AMS).	The main apprehension arises from the provisions of Amber Box which have been divided into product specific subsidies and non-product specific subsidies like subsidy on input i.e. fertilizers electricity and irrigation. However, in Himachal Pradesh the AMS under Amber Box is below the limit of 13 percent as recommended for developing countries.
(b) Export Competition	Himachal Pradesh has favourable conditions for growing temperate fruits and vegetables, which have scope of export. Export subsidies of the kind listed in the agreement which attract reduction commitments are non existent in India. Hence, there is scope to subsidized the export and make it more competitive in the international markets.	In Himachal Pradesh the cost of production of commercial crops is relatively higher and it cannot be subsidized beyond an aggregate limit of 13 per cent under the provisions of Amber Box. Secondly the product of the state is sometimes un-exportable as it does not qualify the norms of Agreement on Application of Sanitary and Phytrosanetory measures (SPS).
Market Access	In Himachal Pradesh the production of cereals pulses and oilseeds is deficient. The availability of such products can be increased through imports and the resources can be diverted to the production of such crops having export potentials like fruits and vegetables. This will bring down the cost of production making the domestic products internationally competitive.	The conversion of non-tariff barriers to tariff barriers may not be prove to be deterrent for the importers as the aggregate cost of imported products may not be significantly different from the domestic product. This might lead to the substitution of domestic product with imports and may prove detrimental for the domestic producers.
2. SPS & TBT Clauses	The imposition of requirements of SPS & TBT will help in meeting the sanitary and phytrosanetary and technical requirement of importing countries will help in boosting the exports of fruits and vegetable from the state.	The SPS and TBT agreements contain promises of financial and technical assistance for the developing countries therefore these clauses have no possible unfavourable effects on Himachal agricultural economy.
3. TRIPS (and possibly TRIMS)	The favourable aspect of TRIPS emerges from the fact that under it, it is required provide protection by intellectual property rights to such plant varieties which are ethnic plant varieties having a potentials of commercial application in other parts of the world, either by patent or by effective sui-generris legislation or a combination of both.	Like most developing countries Himachal Pradesh is likely to face two sets of difficulties in this area. On one hand it lacks scientific capability to innovate as well as the expertise and necessary institutional development to use the IPR as a tool for development.

Potential Threats and Opportunities for Indian Farmer as Perceived by major Stakeholders of State Agriculture

Sources of threat and opportunities	Potential threats with reasoning	Observed gaps in policy leading to no risk coverage of threats	Potential opportunities with reasoning	Observed gaps in policy leading to inadequate realization of potential gains
1.Market for factor inputs and services (consider each input/service separately):				
(A) Insecticides/Pesticides	a. Spurious material. b. High costs c. Low availability d. Drug resistance e. Phytrosantitary (High Toxicity) f. Improper application	a. Lack of quality control. b. Low rate of subsidy. c. Irregular supply. d. Spray schedule not properly adopted. e. Provision of IPM not properly enforced.	a. Low cost material. b. Good quality material. c. High effectiveness	a. Free entry of suppliers in the market not allowed. b. Free entry of suppliers in the market not allowed c. Free entry of suppliers in the market not allowed
(B) Plant material	a. High cost b. Low suitability for local climate. c. Capital intensive. d. Labour intensive e. High expertise required. f. Poor demand in domestic markets. g. Competition from imported apple.	a. Low number of nurseries and high transportation cost. b. Little efforts for identify the compatible varieties. c. No gap. d. No gap. e. No gap. f. No mention in policy document g. No mention in policy document	a. New root stock b. High density plantation c. High productivity. d. Good quality. e. International demand. f. Disease resistance. g. High profitability	a. No. Gap. b. Less importance to small and marginal farmers. c. No gap. d. No. gap. e. No mention in policy. f. No gap. g. No. gap.
3. Fertilizer	a. Phytrosantitary conditions. b. High cost. c. Less availability.	a. Provision of Bio-fertilizer. b. Provision of subsidy. c. No. mention in the policy document	a. Increased availability. b. Good quality. c. Low costs	a. Open markets for fertilizer. b. No. gap. c. No. gap.
4. Production Technology:	a. Low adoption rates. b. Capital intensive c. Low replicability. d. Lack of capability for adoption. e. Poor economic condition.	a. No. gap b. Provision for subsidy. c. No. gap d. No. gap. e. No. gap.	a. Availability of number as technologies. b. Cost effective. c. Higher productivity and quality.	a. Identification of suitable technology. b. No. gap. c. No. gap.
5. Credit	a. Low availability to marginal	a. No. gap.	a. Low interest	a. No. gap.

	and small farmers. b. Diversion of credit for unproductive uses	b. No. gap.	rates. b. Easy availability	b. No. gap.
6. Markets for Apple	a. Enterance of imported apple in domestic markets b. High cost of production. c. Inadequate grading and packing. d. Poor quality. e. High cost of transportation. f. Poor post harvest management. g. Poor demand of delicious varieties in foreign markets.	a. No mention in policy document. b. No. mention in policy document. c. Extention drive and new grading and packing houses. d. No. gap. e. Thrust on road net work and gavity rope ways. f. Inadequate treatment. g. No. gap.	a. Good demand in domestic markets. b. Scope for export of newly planted variety apple. c. Good demanding neighbouring countries. d. Availability of new market technologies.	a. No. gap. b. No. mention in policy document. c. No mention in policy document. d. No. gap.
7. Natural Resources	a. Soil Erosion of non-horticultural land. b. Deforestation. c. Bio-Diversity reduction. d. Rainfed cultivation. e. Air and water pollution.	a. No. gap. b. No. gap. c. Awareness but no policy. d. No. gap. e. No. mention in policy.	a. Harneshing of nitche. b. Best use of marginal land. c. Increase in green cover. d. Check in soil erosion of horticultural land.	a. No. gap. b. No. gap. c. Secondary benefit but no mention in policy document. d. Secondary benefit but no mention in policy document.
8. Human Resources	a. Health hazard the to use of chemicals	No. mention in policy	a. Employment generation. b. Improved health. c. Improved quality of life.	a. No. gap. b. No. gap. c. No. gap.

State Level Matrix for Repositioning/Restructuring of State Agriculture.

Issues	Sector	WTO	Other Factors	Policy climate	National	State
Supply of reliable planting material	b. Govt. line departments. c. Private agencies. d. Co-operatives. e. Farmers		a. Non-availability. b. Uncertified material leading to apple of other than intended variety, low productivity and poor quality.	**Technological:** Certification rules not properly enforced. **Institution:** Lack of testing and certifying equipments and agencies. **Price:** Large differentially between good and poor quality material.	National horticultural board should evolved uniform policy at national level for all fruits.	Department of horticulture should establish laboratories with modern equipment and trained personals.
Deteriorating phytrosanatory conditions:	a. Govt. line, departments. b. Suppliers of chemicals. c. Co-operatives/federation. d. Farmers	Under the stipulations of WTO, the fruit being presently produced becomes unfit for international markets due to violation of Phytrosanetory conditions	Increased level of chemicals are being used in order to maintain the production level and maintenance/enhancement of quality	**Technological:** Alternative technologies for insect and pest management not being introduced and popularised. **Institutional:** Ineffectiveness of institutional mechanism for transfer of IPM and other eco-friendly technologies at farm level.		Introduction and popularize of IPM Bio-fertilizer and organic manuring
Marketing challenges due to increased imports of apples	Ministry of agriculture, GOI, APEDA, NHB and private traders	Increased quantity of imported apples due to scaling down of duty structure posing challenges to domestic producers on quality and price front.	High income group consumers are proffering imported fruits as consumption of imported fruits is becoming a status symbol.	**Technology:** Poor quality of produce, poor grading and packing of domestic apple. **Institutions:** Enforcement of standardization norms with legal back-up. Price:	APEDA and NHB should evolve policy for improving the quality and post harvest technology so that domestic producers can compete with the imports.	State department of horticulture HPMC, Agro industry corporation should ensure the improvement in quality and post harvest management through technological and institutional intervention.

CHAPTER –I

INDIA'S INVOLVEMENT WITH WTO AND ROLE OF HIMACHAL PRADESH

1.1 About National Agricultural Policy

Although the Indian economy has achieved certain landmark developments (the most important being achievement of near-self-sufficiency in foodgrains) during the post-Independence era, its development process so far seems to have deviated from the established pattern followed by the developed countries in two important respects. First, so far as the quantitative aspect of growth is concerned. India has hardly experienced the growth rate of the developed countries of the past or of the present times. Second, on the qualitative front, structural changes so far observed in India seem to be falling far short of the expected or predicted pattern. Economic development of the developed countries has invariably been accompanied by progressive decline in both GDP and employment shares of agriculture, on the one hand, and gradual rise in the shares of both industry and services, and invariably and eventually of the services, on the other. Sectoral developments in India, though conforming to this broad pattern, display two important weaknesses. The first weakness is that GDP share of services started growing at a fast rate even before a turnaround is achieved in growth of industry share. This phenomenon is often referred to as 'excessive' services growth. The second weakness is the growing imbalance or 'disproportionality' between GDP share and employment share of each sector while GDP share of agriculture has fallen steadily, this is not true of its employment share. Similarly, employment shares of industry and services have risen very little in proportion to their GDP shares (Datta, 2001).

The Government of India adopted a new economic policy in July 1991 with a view to improving India's competitiveness in the global market. By then many countries had already initiated structural changes in their respective economics. The main features of these changes were (i) privatization of public sector, (ii) market

friendliness and liberalizing the economy through deregulation. Since then India too has to respond to the changing global economic order for sustained economic growth. The new economic policy being implemented since, 1991 has progressively started posing new challenges in all sectors of the economy and is also opening up new opportunities in the national and international markets. It has reinforced the feeling that only liberalisation and opening of the economy to global competition can remove the shackles that had earlier chained the Indian economy. Liberalisation is expected to provide a powerful thrust to growth and modernization of the economy including agriculture.

Introduction of liberalisation coupled with the acceptance of GATT accord in 1994 has brought about new challenges for India in the world market of agricultural commodities. Even though liberalized trade policy seems to be quite attractive but taking into consideration the weakness of the free trade system, elasticity of demand for food grains and political pressures with economic aid, it will not be in the interest of the country to abandon the policy of self-sufficiency in the production of food grains (Gangwar & Pandey, 1995). There is, therefore, a dire need for developing state of art of production, processing and market technologies and strategies in order to avail due share of the international market and effectively face competition from foreign suppliers in the national market. The National Agricultural Systems (NARS) needs to be made efficient, responsive to the changing physical and economic environment and adequately incentive-oriented in order that it generates improved technologies which not only compete with foreign patents but also produces its own technologies that would compete in the international market under Trade Related Intellectual Property Rights (Johal, 1995).

GATT, an International forum was established in 1948, initially with 23 countries including India as original signatories to oversee the smooth conduct of world trade, i.e. to promote the world trade by reducing barriers to it, such as custom duties and quotes, with some 'special and differential' treatment to developing countries. Traditionally, GATT was concerned with issues related to trade in merchandise, i.e.

the goods sector only. Its jurisdiction stopped at the national borders thus keeping domestic policies and matters other than goods trade beyond its orbit. The first seven rounds of GATT confined to this paradigm only, ended with the Tokyo Round in 1979.

The eighth round of GATT negotiations, which began in 1986, when its Director General was Arthur Dunkel (hence the Dunkel Text) began at Uruguay, Punta Del Este (hence also called Uruguay Round). There was major change from the previous rounds by including new areas such as agriculture, textiles, investment, intellectual property rights, and services. The expanded scope of GATT has made it much more sensitive than ever before especially by touching issues related to the domestic policies of the member countries.

The VIII round of GATT was finally signed on 15.4.1994 by 125 countries, including India and has been effective w.e.f. July 1995. This is a commitment on the part of each signatory to give all other signatories the Most Favoured Nations (MFN) status. The long-term objective is "to establish a fair and market-oriented agricultural trading system" through "substantial progressive reductions in agricultural support and protection over an agreed period of time" with specific binding commitments on market access, domestic support and export competition (W.T.C. 1994).

The agreement is to facilitate free international trade in goods and services by removing/minimizing different impediments. The member countries have committed themselves to conduct their trade policy in a more transparent manner and in an open trading environment. It envisages liberalization at a greater speed and will contribute to more effective surveillance and to strict observance of multilateral rules and disciplines. And in order to supervise the globalization operations of various economies and settle their mutual disputes, the GATT henceforth will be replaced by WTO (World Trade Organisation), which will have independent machinery for consultation, evaluation, implementation, negotiations and punishment.

The World Trade Organisation (WTO) set up under the General Agreement on Tariffs and Trade (GATT) provisions in this respect throws daunting challenges and opens up vast opportunities in this respect. In these situations, the agricultural sector cannot ignore the influences that would be exerted on small and marginal farmers who account for over 78 per cent of the farmers in India (GOI, 1995) and are also the largest consumer group. This implies that development process based on competitive free market system cannot afford to ignore large majority of poor peasant producers as it cannot do in respect of socio-economically handicapped section of consumers.

1.2 WTO and Indian Agriculture

The emergence of World Trade Organization (WTO) in January 1995, succeeding the General Agreement on Tariff and Trade (GATT) was a landmark event in the annals of global trade reforms. It offered a set of Agreements offering a framework of rules for multilateral trading system. The comments of the member countries to these set of rules has ushered the era of globalisation for diverse economic systems to interest with lesser restrictions and greater transparency. It has also rendered greater opportunities for economics having either more efficient production systems of the support mechanism provided the edge in the competition. Nevertheless, the realization that progressive economics cannot afford to ignore the trade opportunities for sustaining their economic growth gained strength. The economic growth is steered by the accelerated production of tradable goods and services. Thus the higher economic growth leads to availability of larger volume of goods and services for trade both domestically and internationally. In other words, the trade is the absorber sustainers and stimulator of economic growth. The decade of nineties, besides the evolution of WTO, had another significance Indian context that India emerged as one of the ten fastest growing economies in the world. India's future strategies aim at further acceleration of economic growth to the tune of 8 per cent in the Tenth Five Year Plan implying ever higher need of acquiring trade opportunities. The understanding of the trading framework offered by the WTO and the

preparedness for the same therefore, assume importance for all the players of the economic system in the country.

The WTO agreement which was reached at Marrakesh in 1995 has now 144 members committed to its rules of multilateral trading system, the spirit of which is drawn from its Preamble, which states “Recognizing that their relations in the field of trade and economic endeavour should be conducted with a view to raising standards of living ensuring full employment and a large and steadily growing volume of real income and effective demand, and expanding the production of and trade in goods and services, while allowing for the optimal use of the world’s resources in accordance with the objective of sustainable development, seeking both to protect and preserve the environment and to enhance the means for doing so in a manner consistent with their respective needs and concerns at different levels of economic development”.

The two basic principles of WTO on which the premise of free and fair trade is built are; market access and non-discrimination. In a move towards free global trade, the principle of market access envisages tariff to be the only legitimate barrier to trade and in the process general elimination of QRS on imports and exports, reduction of tariff and non-tariff barriers as well as binding of tariffs and the transparency and predictability in the process. The fairness of the trade is aimed through non-discrimination, which has two features viz., Most Favoured Nation (MFN) criteria under which all the member countries are equally favoured with the exception of Regional Trade Agreements (RTAs), General System of Preference (GSP) and Sanitary and Phyto-Sanitary Conditions (SPS), and the National Treatment (NT) under which any produce landing in a member country will be treated at par with the corresponding domestic produce with the exception of Government procurement.

Decision making in WTO follows GATT practice of consensus decision making continues, by majority vote each country has one vote, Special voting requirements

in specific cases, 2/3rd majority for amendments 3/4th for interpretation and consensus for changing basic provision like Most Favoured Nation (MFN). The WTO decision-making system requires positive consensus for rejection of a panel/appellate body decisions instead of the negative consensus rule in GATT. This decision-making system is delivered by structure of WTO, which has Ministerial Conference at the Apex, under which other organs such General Council, Disputes Settlement Body and Review mechanism exist.

WTO unlike GATT, has expanded into areas other than trade in industrial goods such as textiles, agricultural goods, services, intellectual property and trade related investment measures and is more intrusive as detailed rules, such as those on agriculture, subsidies, intellectual property and investment measures impact the industry and economy on the whole, and not just exporters or importers.

India does not have competitive advantage in many agricultural commodities on account of high cost of production mainly because of low level of productivity. The poor infrastructure in terms of roads, transport and processing infrastructure is another limitation to face the external challenges created by WTO. International prices are highly volatile and India lacks in market intelligence to plan its exports and imports accordingly. Many Indian products are often of poor quality and do not meet the international export standards. India has diverse agro-climatic conditions for production of a number of commodities. These include fruits, vegetables, livestock products and spices, which can emerge India an important player in the world market provided concerted efforts are made to convert these challenges into opportunities.

Technology will be key to growth in this age of competition. Therefore improving efficiency of production by way voicing agricultural productivity or reducing cost of production would help improve competitiveness of many agricultural products. This however would require increased investment in agricultural products; particularly in the rainfed areas, which produce a number of

agricultural commodities having high, export value. Thus, efforts need to be facilitated by development of production and processing infrastructure in terms of transport, markets, storage warehouse and processing. Develop domestic as well as international marketing intelligence, ability to guide the farmers as well as exporters for improving their production and export planning decisions.

Identify commodities having export potential and develop export zones on the basis of comparative advantage in production. Provide incentives to farmers to produce as per the requirement of the international market. Here the involvement of the private sector can be of significant importance. Quality is an important aspect in international trade. Hence, improvements in sanitary and phyto-sanitary conditions at the level of production, transportation, processing and export are planned essential.

1.3 Status of Commercial Crops in India

Agricultural research and technology in the post-green revolution era has been focused mainly on foodgrains in the irrigated areas. Raising the productivity of resources used in agriculture through their better allocation between different crops and regions and by adopting improved technologies is a major objective of liberalisation. The Dunkel draft calls for a number of measures for reducing subsidies on agricultural products. It also lists a number of agricultural policies known as the 'green box' which need not be reduced and which cannot be the subject of countervailing measures in foreign markets. These policy measures have been hailed as radical reforms as the Indian economy would be insulated from inefficiency, low productivity, alliance between bureaucrats and various vested interests and the parallel economy, in 1993 India took the first place in the production of fruits (total) with 8.58 per cent share in world production, vegetables (total) (12.89 per cent), coffee (2.91 per cent), cashew kernels (31.25 per cent), Jute and fiber (44.23 percent), pulses (22.82 per cent), banana (14.23 per cent), and castor oil (51 per cent). India occupied the second rank in world production of rice

(21 per cent), sorghum (21.7 per cent), groundnut shell (29.59 per cent) and papaya (21 per cent), and third rank in wheat (10 per cent) and cotton (13.88 percent) production. In spite of its high rank in production, India's share in total world export of these commodities was negligible. India could contribute sizeable share in world export of tea (14.31 per cent), pepper (22.59 per cent), mango (40 per cent) and oilcakes (8.93 per cent) (Bhole, 1995). Considering the comparative advantages in certain commodities, reallocation of area under different crops, for example, shift from traditional crops to high value cash crops can help in improving India's balance of trade. In the recent years high value commercial crops (fruit and vegetables) in some potential regions have become popular and are expected to improve the economy of the region in general and small farmers in particular (Singh, 1997).

The commercial crops provide raw material to many industries and therefore, industrial growth has also caused inclination towards these raw material providing crops. Usually these crops are kept in the category of commercial crops, which are transformed into useful products after major processing. Most of the non-food crops come in this group but such a classification of crops is not valid at present. Because most of the food crops, particularly wheat and rice, are also marketed on large scale and therefore, exclusion of these crops from the list of commercial crops is not logical. On the other hand there are many non-food crops, which are produced to meet the needs of the producers. Most of the traditional oilseeds are of this nature. Thus, it is not the crop itself but the purpose of its production which places any crop in the class of commercial crops. Hence, the concept of commercial crops is not static but a dynamic one and it changes with the development of society.

Production of commercial crops depends on interaction of several natural, social, economic and cultural factors. Among these factors the availability of marketing facilities, transportation, industrialization, low density of population and comparative advantages in production are important. Economic considerations are most significant in the production of commercial crops than the physical one. It is

because the purpose of production of such crops is to maximize the profit. The margin of profit depends on demand and accessibility to markets to a great extent (Singh, 1990).

In India, after the achievement of self-sufficiency in foodgrains production during sixties and seventies, emphasis has been shifted to the production of commercial crops. These crops became the major source of export earnings and an index of prosperity of the regions where these are produced. Total area under these crops was 31,288 thousand hectares in 1970-71 and it increased to 39, 823 thousand hectares in 1992-93 (GOI, 1995). The share of these crops in total cropped area of the country increased from 18.87 per cent to 21.63 per cent during the same period. The production of these crops has also increased from 1,74,254 thousand tonnes to 3,54,231 thousand tonnes during the same period. Among these crops fruits and vegetables have recorded the highest growth (27.3 per cent) between 1970-71 and 1992-93.

In Himachal Pradesh, the commercial activities identified in agricultural sector mainly include production of fruits and vegetables (horticultural crops). Though the share of these crops in total cropped area of the State is only about 7.39 per cent yet due to high value crops their contribution to total agricultural sector income is quite significant. During 1995-96 about 28 per cent of State income has been contributed by agriculture sector alone (GOHP, 1997).

In Himachal Pradesh owing to favourable agro-climatic conditions and natural resource base, the production of temperate fruits especially of apple and fresh vegetables became popular on all categories of farms. Since both these crop-groups require small land base, the adoption of these crops has registered a great success, particularly among the small sizes of land-owing families (Azad et. al., 1989 & Singh, 1993). During 1966 vegetable and fruit production in the mid hill zone of Himachal Pradesh (1000-1500 MSL) was acknowledged as good cash crops. Earlier the seeds of temperate vegetables were imported from European

countries but since 1965-66 the production of vegetable seeds has been introduced in the region itself. Solan area became quite popular for the production of quality seeds of cauliflower and other vegetables. Shimla area became famous for disease-free seed potatoes. Kangra district became popular for the production of sub-tropical fruits like citrus, mango and litchi etc. (Singh & Saraswat, 1996).

During last one decade the cropping pattern in the State has changed in favour of commercial crops. In 1975-76, the area under cereals, pulses, vegetables and fruits crops was 7,72,962, 71,385, 19,911 and 17,361 hectares respectively. And the same increased to 8,18,211, 41,067, 25,366 and 46,465 hectares respectively by 1992-93. This clearly indicates that the commercialization process of agriculture in Himachal Pradesh has acquired momentum. More than 95 per cent of commercial crops (fruits and vegetables) produced in the state are sold in the markets in the plains. The value of fruits produced in the State during 1994-95 was estimated worth Rs.350 crores and the value of vegetables was estimated at Rs.215 crores per annum.

The commercialization of agriculture in the state is highly dependent on the agro-climatic physical conditions and natural resource base of the region. The major resources required and used by the farmers in production process of commercial crops are water, manure, and forestry products. And the efficient use of these resources for their sustainability is the prime concern of the users. To ensure the sustainable use of these resources, their proper management becomes necessary as the same are becoming unsustainable by the over-use/exploitation. All this suggest a need for suitable policy for micro-level planning of these resources.

1.4 Himachal's Agriculture Sector and WTO

In Western Himalayan Region, Himachal Pradesh has made remarkable achievements in socio-economic progress of its people through transformation brought about in agriculture and horticulture. Fruit and vegetables have been the traditional route for agricultural diversification in the state. Whereas fruit cultivation has been adopted in a big way in the temperate belt, the same does not appear to enjoy any comparative advantage in non-temperate belt. Within horticulture, diversification through off-seasonal vegetables seems to possess great potential in most of the areas in both temperate and non-temperate belts of Western Himalayan Region.

This region has easy access to vast consumer markets in Delhi and economically prosperous green revolution areas of North India. The climatic conditions in many parts of Western Himalayan Region are suitable to produce crops like tomato, peas, beans, cabbage and capsicum in summer season, when these crops are not grown in the plains and there is severe shortage of fresh vegetables.

In case of Himachal Pradesh horticulture crops such as, Apple, potato, Mushroom, Hops, garlic, ginger and floriculture products etc. have substantial export potential to earn valuable foreign exchange. The key determinants for exports are (i) export surplus, (ii) quality production based on phyto-sanitary standards, (iii) comparative economic advantage, (iv) infrastructure support and consistent export policy.

1.5 The Issue

Planning is basically an exercise in optimization, subject to opportunities and constraints. Since the feasible framework in agriculture is primarily based on natural conditions which are widely diverse in a big country like India, research and development programmes may have to prescribe diverse production and resource

use patterns to suit different sub-sectors of our agricultural economy. In this connection, V.M. Rao's classification of Indian agriculture into three sub-sections, viz. the green revolution area, the non-green revolution green area and the dry land area deserves attention. According to him, marketisation of Indian agriculture at this stage may be restricted to organised parts which are now self-reliant, and government's involvement in the areas of research and development should concentrate on the vast backward unorganized parts to spread the benefits of growth to all regions and all sections of people (Rao, V.M., 1994).

The globalization objective is embedded in (i) the GATT Accord which requires that our agricultural policies should be geared towards establishing a market-oriented agricultural trading system, and (ii) in our structural reforms which call for deregulation of foreign trade and foreign investment. Liberalization of agricultural exports is the key element of this globalization objective. Liberalisation opens up the possibility of processing different varieties of fruits, flowers, fish, etc. into branded products for exports giving rise to enclave-like development. Some economists strongly advocate deregulation of exports items like rice, wheat, fish, cotton, fruits and livestock products in respect of which India has a comparative advantage in the international trade (Gulati and Sharma, 1994).

The economic health and well-being of the region is related, directly and indirectly to the management and productivity of resource system. With high rates of population growth and increasing commercialization of agriculture the regulatory mechanism, that earlier maintained a balance between man and environment, is diluting. The increasing scale of human activity has prompted the search for approaches to development that are "sustainable, economic development and commercialization of agriculture have to be reconciled with environment at concerns in order to strike a healthy balance between resource conservation and development.

It is with this reference compatibility between resource-based solution and institutional parameters that the Agro-Climatic Regional Planning (ACRP) approach

has some thing definite to offer. This calls for strengthening and augmentation of resource base of farm sector (land, water, forest) in a sustained manner. The focus on resources calls for generation of space-specific information. Therefore the micro-level planning envisages a distinct multi-sectoral package of area-specific investment proposals and institutional arrangements arising from a detailed examination of the resources, problems and potential of local areas. It would be a step towards participatory planning dealing with local needs on a scientific basis. Keeping in view the above-stated background and considerations, the present study focuses on the following specific themes in terms of objectives.

1.6 Objectives of the study

1. To bring out the state's concerns as well as to record the state's view on the changing economic situation due to India's involvement with the WTO.

2. To document the State's initiatives to meet the problems and constraints arising out of India's WTO commitments and review in brief the effectiveness of government interventions in the form of technology adoption, institutional adaptation, price policy changes (e.g., through changes in tax and subsidy regimes) and legal policy changes undertaken so far.

3. To discuss with the important stakeholders (as identified above) the requirements for formulation of a policy document at the state level, in response to the country's growing concerns at home and abroad (i.e., in response to challenges arising from WTO or otherwise).

4. To elaborate on the initiatives taken to meet the challenge of diversification, technology, resource management and price policy at the state level (whether in response to WTO or otherwise).

5. To assemble these views in the form of a meaningful policy requirement matrix, relating problems/issues to action points suggested/recommended and also trying to spell out the agencies, which should undertake such actions.

1.7 Methodology

The agricultural policy in the state especially in the context of WTO has been analysed for apple crop. This choice has been based on the fact that apple contributed about 40 percent area of the total fruit and 82 per cent in the total fruit production Himachal Pradesh is truly the 'Apple State of India', next only to the Jammu and Kashmir state both in terms of area and production of the crop. The production of apple is mainly concentrated in the districts of Shimla and Kullu. It was therefore consider pertinent that the various stakeholders, whose responses will farm the backbone of the study should be drawn from these two districts.

Therefore, the study is based on the information collected from various stakeholders like administrators (Director of Horticulture, Agriculture, Managing Director Himachal Pradesh Marketing and Processing Corporation Ltd.), farm leaders farmers office bearers of Fruit and Vegetable Growers Association Located at Palti Kuhl in Kullu district and Kiari in Shimla district. Academicians (Agricultural scientist of Y.S. Parmar University of Horticulture of forestry at Nouni, Solan, H.P. Agriculture University Palampur, H.P. University Shimla), traders located at Fruit and Vegetable Market Shimla, Theog Kullu and Solan, Fruit and Vegetable Market Azadpur at Delhi and other stakeholder (officer bearer of Apple Growers Co-operative Society at Shanthla in district Shimla, Lahaul-Potato growers Co-operative society at Mandi in Kullu district.

In addition to this the review of policy documents of following departments have provided valuable inputs for the present study:

(i) State Department of Horticulture,
(ii) State Department of Agriculture,
(iii) State Department of Animal Husbandry,
(iv) State Department of Land Record,
(v) Himachal Pradesh Horticulture Produce Marketing and Processing Corporation Ltd.

CHAPTER - 2

AGRICULTURAL SCENARIO OF HIMACHAL PRADESH

2.1 Changes in Overall Economy

Resource allocation patterns have a direct bearing on the growth and structure of the economy. Table-1 shows the percentage distribution of State Domestic product by origin of industry and Table-2 shows the basic indicators of growth in Himachal Pradesh. An analysis of the growth and structure of the Net Domestic Product of Himachal Pradesh shows that the total income of the State grew at the rate of 2.41 per cent (at constant 1970-71 prices). The overall growth rate of the primary sector (agriculture and allied activities) was merely 1.67 per cent per annum. Income from agriculture (including horticulture and animal husbandry) grew at the rate of 2.33 per cent per annum. Growth in income from forestry was negative (this was because of the ban on forest cutting). The secondary (industrial) sector grew at the rate of 29.14 per cent and in electricity, gas, and water supply it was 21.7 per cent. The tertiary (services) sector grew at the rate of 4.7 per cent per annum. The tertiary (services) sector grew at the rate of 4.7 per cent per annum. The growth rate in banking and insurance was 41.9 per cent per annum. Transport and Communications showed a growth rate of 4.9 per cent per annum. The relatively higher growth rate in the secondary and tertiary sectors is due to their small initial base. The growth in income from different sectors at 1993-94 prices is higher than the 1970-71 prices.

The relative contribution of different sectors to the Net State Domestic Product has been changing over time. The share of the primary sector has been declining and that of the secondary and tertiary sectors increasing, as is expected in any developing economy. In 1967-68, the primary sector accounted for a 61 per cent share in the Net State Domestic Product, whereas, by 1982-83, its share had declined to 50 per cent and in 2000-01 it further decreased to 24.4 percent. During the same period, the share of the secondary sector increased from 13.8 per cent to 20.7 per cent and 33.1 percent, whereas the share of the tertiary sector increased

from 25 per cent to 29 per cent and 42 percent. The primary sector still has a dominant position in the economy. The tertiary sector has mostly been catering to the needs of the secondary sector, because the growth rate of the tertiary sector has been barely keeping pace with that of the secondary sector. Having a low base, the tertiary sector services were, by and large, used up by he secondary sector and thus they could not percolate down to the primary sector and rural areas.

It is observed that the economy of the State has undergone structural changes temporally, in that the relative contributions by the primary sector, secondary sector, and tertiary sector have changed. But it is significant to note that even though the relative share of agriculture (primary sector) in the State Domestic Product has gone down, the percentage of the work force dependant upon this sector has not decreased, since, 71 per cent of working people are still directly dependant on agriculture according to the 2001 census.

There has been some emphasis on industrialization, as reflected by the increase in plan allocation to the manufacturing sector, yet the share of this sector in the State income has not risen much. This indicates that there is a further need to probe into what types of industries are being promoted through State intervention, their forward and backward linkages with the rest of the economy, their impact on employment generation, and the incidence of “sickness” among the promoted industries. For a hilly area like Himachal Pradesh, small-scale agro-industries are best suited to the use of local raw materials and manpower. Small-scale industries can provide employment opportunities at a relatively smaller capital cost. These industries help in the dispersal of industrial activities and thus foster balanced development of all parts of the region.

In a hilly State like Himachal Pradesh, with meager infrastructural facilities (e.g. roads, schools, hospitals etc.), high priority in resource allocation had to be initially accorded to the creation of the prerequisites for development. Heavy allocation of resources for social overheads that provide education, medical facilities, and public

health services is also justified. Because of the high priority given to transport and communication, the leangth of motorable roads increased more than four times from 1967 to 2002. During the same period, the literacy rate increased more than four times, from 17 per cent in the 1961 Census and 77 per cent in the 2001 Census. Education is one of the basic needs for economic development in a region. The Himachal Pradesh Government gave due consideration to education and to medical facilities in various Plans. The number of hospitals and dispensaries increased from 480 to 1262 from 1967-68 to 2001-02 (see Table 2).

Table-1: Percentage Distribution to Net State Domestic Product of Himachal Pradesh

Economic activity/sector	1967-68	1972-73	1982-83	1983-84	1990-91	2000-2001	Annual growth (67-82)	Annual growth (83-01)
1. Agriculture & Animal husbandry	55.45	46.15	45.05	35.75	31.76	19.52	2.33	1.66
2. Forestry	5.09	7.86	4.78	10.65	6.62	4.67	-2.33	3.45
3.fisheries	0.04	0.04	0.14	0.28	0.38	0.21	30.00	3.97
Sub-total	**60.58**	**54.05**	**49.97**	**46.68**	**38.76**	**24.40**	**1.67**	**1.99**
4.Mining & quarrying	0.07	0.22	0.23	0.91	1.49	1.10	1.66	3.35
5.Manufacturing	5.55	5.51	5.61	3.37	6.05	11.23	3.20	14.33
6. Construction	7.38	13.48	13.28	12.02	12.90	15.55	2.57	4.85
7.electricity, gas and water supply	0.86	0.59	1.56	3.28	3.43	5.22	21.71	11.70
Sub-total	**13.86**	**19.80**	**20.68**	**19.58**	**23.87**	**33.10**	**3.34**	**9.31**
8.transport, storage & communication	2.50	2.76	3.59	2.04	1.24	2.41	4.91	5.64
9.Trade, hotels & restaurants	7.35	5.45	3.86	8.78	8.83	8.75	-2.14	31.00
Sub-total	9.85	8.21	7.45	10.82	10.07	11.16	0.17	8.82
10.Banking & insurance	0.56	0.94	3.26	2.14	3.93	4.86	41.93	10.22
11. Real state	2.78	2.97	2.55	6.42	5.50	4.22	1.02	2.83
12.Public administration	5.10	5.70	6.85	6.21	7.86	9.27	4.03	6.26
13.Other services	7.27	8.33	9.24	8.15	10.01	12.99	3.06	7.94
Sub-total	15.71	17.94	21.90	22.92	27.30	31.34	4.70	6.75
Total income	100.00	100.00	100.00	100.00	100.00	100.00	2.41	5.70
Actual income in Rs. lakhs	18300*	23910*	2969*	268181@	391891@	667155@		

*Source: Department of Economics & Statistics Shimla, H.P. * At 1970-71 prices @ At 1993-94 prices*

Table-2: Basic Indicators of Growth in Himachal Pradesh

Sr. No.	Indicators	1967-68	1972-73	1982-83	1992-93	2001-2002
1.	Population (millions)	3.22	3.57	4.28	5.37	6.07
2.	% of population living in rural areas	NA	94.97	92.38	91.31	90.28
3.	Population density/sq.km.	57.8	64.5	77.0	93.0	109
4.	Net state domestic product (Rs. in million)	1830	2391	2960	3578	10310
5.	Per capita income (Rs./yr.)					
	a. at current prices	528	769	1658	5979	21368
	b. at 1970-71 prices	568	669	686	1278	10942*
6.	Literacy rate	21.24	31.96	42.48	63.90	77.13
7.	No. of doctors per million of population	21.8	203	296	204	268
8.	No. of hospital beds per million of population	1440	1270	1355	1482	1783
9.	No. of hospitals & dispensaries	480	590	830	1031	1262
10.	%of villages electrified	6.15	24.83	75.63	100.00	100.00
11.	Per capita domestic consumption of electricity (KWH)	3.1	5.6	75.63	52.72	109.45
12.	Electricity generated (million KWH)	3.7	162.6	540.5	1087383	1149.5
13.	Mileage of roads (km.)	4308	7609	13600	22780	27217
	a. Per 100 km of area (km.)	8.72	16.85	24.44	40.91	48.87
	b. Per thousand of population	1.51	2.61	3.18	4.24	4.48

**At the price of 1993-94;*

Source: Statistical Outline Statistics, Himachal Pradesh of Himachal Pradesh (Various issues) Shimla; Directorate of Economics and.

In a hilly region with sufficient rainfall and vast hydro-electric potential, the power sector should not be considered to be a mere component of infrastructural facilities; rather it should be counted as a commodity production sector and as a source of income. In Himachal Pradesh, during 1967-68, the electricity generated was only 3.7 million kwh and by 2001-02 it rose to 1149.5 million kwh, out of which about 50 per cent of the power (which was surplus) was sold to the neighboring States, thus providing a good source of income for the State.

2.2 Changes in the Agricultural Sector

Since the agricultural sector accounts for the lion's share in the Net State domestic Product and employs more than two-thirds of the working population, its

growth is vital for the growth of the State economy and, consequently, the socio-economic upliftment of the rural masses. From this perspective, it is interesting to make a critical appraisal of the changing profile of agriculture in Himachal Pradesh.

2.3 Land Use

The advantage of extensive cultivation cannot be taken because of a variety of reasons. The analysis of the land use pattern over time, therefore, assumes great importance in developing a future strategy regarding reallocation of resources to different crops. The land use data are presented in Table-3. The total geographical area reported by the professional survey was 5,567,300 hectares while the cadastrally surveyed area (by village papers) during 1999-2000 was only 4,531,800 hectares. The rest of the area was under snow and was inaccessible. The reported area (by village papers) was considered for analysis of the land use-pattern, the forest area had increased from 21.8 to 24.1 per cent of the total reported area during the thirty years since 1970-71. However, an increase of 19 per cent in barren and uncultivable wasteland is unfortunate. This could be attributed to soil erosion, which is a disturbing phenomenon. The land put to non-agricultural uses, such as roads, etc also increased from 5.9 per cent to 6.66 percent during this period. The area under cultivable waste, i.e. land once cultivated and then not cultivated for five years in succession, showed a welcome decline from 5.7 percent to 2.63 percent of total area. Permanent pastures and other grazing lands accounted for 32.47 per cent of the reported area during 2001-02, indicating that the State has good potential for supporting animal husbandry programmes. The percentage of land under current fallows and other fallow land also declined from 2.1 to 1.6 percent. However, the net area sown increased from 546,400 hectares to 551,500 hectares during the study period while the cropping intensity had increased only slightly from 166.9 to 173.5 during this period.

Table-3: Changes in Land Use in Himachal Pradesh.

(Area in 000, hectares)

Land use	1970-71		1980-81		1990-91		1999-2000	
	Area	Per cent to total	Area	Per cent to total	Area	Per cent to total	Area	Per cent to total
1.Total geographic area								
a. By professional survey	5565.8	-	5567.3	-	5567.3	-	5567.3	
b. Reporting area for land utilization purpose	2932.5	100.00	2985.2	100.00	3367.6	100.00	4531.8	100.00
2.Forests	638.2	21.8	806.8	27.03	1039.0	30.85	1094.2	24.14
3.Barren & uncultivable	118.8	4.0	141.4	4.74	183.8	5.45	856.9	18.90
4.Land put to non-agricultural uses	172.10	5.9	161.9	5.42	193.2	5.73	302.2	6.66
5.Cultivable waste	167.7	5.7	223.7	7.49	125.1	3.71	119.4	2.63
6.Permanent pastures and other grazing lands	1188.0	40.5	985.9	33.02	1135.4	33.72	1471.5	32.47
7.Land under misc. tree crops not included in area sown	40.8	1.4	39.4	1.31	48.2	1.43	64.2	1.42
8.Current fallows	58.3	2.0	41.4	1.38	44.7	1.33	56.2	1.24
9.Other fallow land	2.3	0.10	12.6	0.42	15.4	0.45	15.7	0.35
10.Net area sown	546.4	18.6	572.1	19.16	582.8	17.31	551.5	12.17
11.Cropping intensity (%)	166.9	-	165.4		168.7		173.5	3.83

2.4 Farm Size Structure

There had been an increase in the number of land holdings from 6,09,000 in 1970-71 to 8,63,437 in 1995-96, indicating rapid fragmentation of medium and large holdings due to succession; as well as allotment of land to the landless by the State. The percentage number of marginal and small operational holdings had gone upto 84.5 in 1995-96 while they owned only 47.2 per cent of the total of the number of holdings. The medium and large farmers, who constituted only 15 and 0.5 per cent, owned 45 and 7.8 per cent of the farmed land in the State. The land resources are thus highly skewed in distribution and, with the increase in population, the land-man ratio has gone down and the average size of holdings in Himachal Pradesh has declined from 1.53 ha in 1970-71 to 1.16 ha in 1995-96. This works out to a 25 per cent decline in two and half decades.

2.5 Cropping Pattern

A change in cropping pattern has been taking place in the State as elsewhere in the country. The shift in cropping systems is normally advantageous and indicates a dynamic economy. The change depends upon the crops involved and the multifarious stimuli such as the changing economic, technological, and institutional factors. The Table-4 presents a broad crop-group-wise changing crop pattern in the State. Food crops include cereals, pulses, vegetables, fruit crops, and spices and these together accounted for about 96 per cent of the total cropped area while the remaining was shared by non-food crops. The area under fruit crops registered the highest increase i.e. 1.3 percent in 1970-71 to 6.03 percent in 1999-2000, followed by wheat, total vegetables, maize, and total spices. However, the area under two principal cereal crops, i.e. paddy and barley, total pulses, and total oilseeds, decreased. Pulses suffered a maximum decline, followed by barley, paddy, total non-food crops, and total oilseeds during the reference period. The decrease in area under pulses and oilseeds might not be immediately disadvantageous to the farmers because of the present low-level output-input ratios of these crops, but, nevertheless, it has national repercussions.

2.6 Production and Productivity of Principal Crops

The Table 5 presents the trends in area, production, and productivity of the four principal cereal crops and the three important cash crops in the State. Nationally, the water, fertilizer, and seed (HYV) technology has markedly increased the productivity of wheat from 1,307 kg during 1970-73 to 2,778 kg/ha during 1999-2000 but, in Himachal Pradesh, the impact of the 'green revolution' is not noticeable in wheat as its yield increased from 1,030 to 1513 kg/ha even though the wheat cultivated area was nearly 83.5 per cent saturated with HYVs of this crop. The two important reasons are sub-optimal use of fertilizers and scanty irrigation facilities. Further, the 50 years of research work conducted by the Regional station of the Indian Agricultural Research Institute, at Shimla, indicate that the northern hill

region suffers from innate typical agronomic unsuitability for production of wheat and barley. Apart from this, the menace of rust diseases also causes loss of about 10 per cent in yield. However, the wheat-cultivated area appeared to have gained at the cost of barley and also due to additional areas brought under the plough. This change is perhaps a corollary to a similar change in the food habits of the people in the State. The increase in the productivity of paddy, which had a 56 per cent area under irrigation and almost a hundred per cent area under HYVs, was comparatively noteworthy.

Table-4: Change in Cropping Pattern in Himachal Pradesh.

(Area in hectares)

Crop/crops group	**1970-71**		**1980-81**		**1990-91**		**1999-2000**	
	Area	% to total	Area	% to total	Area	% to total	Area	% to total
Wheat	317672	34.8	350800	34.75	376278	38.25	370587	38.73
Maize	257255	28.2	285900	2832	319111	32.14	299906	31.34
Paddy	103869	11.4	93300	9.24	84939	8.63	79221	8.28
Barley	40387	4.4	36600	3.62	29295	2.98	25901	2.70
Total cereals	764439	83.8	801100	79.35	831583	84.54	791957	82.77
Total pulses	71721	7.9	55500	5.49	39982	4.06	32556	3.40
Total food grains	836163	91.7	856600	84.85	871565	88.61	824513	86.17
Total fruits	11953	1.3	28766	2.84	43671	4.44	57722	6.03
Total vegetables	20546	2.3	21321	2.10	29010	2.95	34675	3.62
Total spices	2665	0.3	3000	0.29	2968	0.30	3995	0.41
Total food crops	875630	96.0	979500	97.03	949752	96.56	923939	96.57
Total oilseeds	22219	2.4	20200	2.00	21235	2.16	18857	1.97
Total non-food crops	36111	4.0	30017	2.97	33847	3.44	32828	3.43
Total crop area	911741	100.0	1009517	100.00	983599	100.00	956767	100.00

Source: Directorate of Land Records, Himachal Pradesh, Shimla

Table-5: Trends in Area, Production and Productivity of Selected Principal Crops of Himachal Pradesh

Crops	Area (`000 ha.)			Production (`000MT)			Productivity (kg./ha.)		
	1970 -73	1998-00	% change	1970- 73	1998-00	% change	1970 –73	1998-00	% change
Maize	257.3	304.2	18.22	402.9	654.8	62.52	1566	2154	37.54
Paddy	99.8	82.5	-17.33	104.7	135.9	29.79	1049	1440	37.27
Wheat	319.8	375.9	17.54	328.9	568.6	72.87	1030	1513	46.89
Barley	41.2	26.8	-34.95	53.0	33.8	-36.22	1286	1261	-1.94
Potato	15.1	14.3	5.29	67.9	152.8	125.03	4497	11167	148.32
Apple	28.7	85.8	198.95	86.0	225.7	162.44	2997	2630	-12.24
Ginger	2.1	1.8	-14.28	1.3	2.8	115.38	619	1404	126.81

Source: 1. Directorate of Land Records, Himachal Pradesh, Shimla.
2. Directorate of Horticulture, Himachal Pradesh, Shimla.

The average yield levels of paddy in the State were 1049 and 1449 kg/ha as against the All India figures of 1,123 and 1,552 kg/ha during 1970-71 and 1999-2000 respectively. But still there has been a marginal shift in area from paddy to other crops. However, in the case of maize, the Himachal farmers have acquitted themselves very well and the productivity levels even exceeded the national average.

As for principal cash crops, the saga of the revolutionary strides in apple production and the increase in area is widely recognized. Apple cropped areas and production registered the notable increases of 199 and 162 per cent respectively. But ginger cultivation recorded a decrease in all respects and the data in Table 8 show a similar trend for potatoes as well. The latter is, however, not accurate as the production figures of the Directorate of Land Records and the Directorate of Agriculture of Himachal Pradesh differ widely. The figures of the directorate of Agriculture are much higher and also more reliable.

2.7 Growth in Milk, Meat and Wool Production

The state has registered a progressive increase in milk production during the last three decades. The total milk production was estimated to be 240.13 thousand tonnes in 1974, which has increased to 760.41 thousand tonnes in 2000-01. The

overall percent increase in milk production with in a time span of about three decades is very encouraging and confirms the soundness of policy adopted for the development of cattle. The per capita availability of milk has also increased from 184 ml in 1974 to 343 ml in 2000-01 showing an increase of 125 per cent during this period. The wool production in the state was 628.7 tones in 1962-63, which has increased to 1582 tones in 2000-01. Similarly, total meat production was 1738 tones in 1967-68, which has increased to 3526 tonnes in 2000-01. The wool production over 1962-63 has increased by 154 per cent and meat production by 108 per cent during 1962-63 to 2000-01.

2.8 Share of Sub-sectors in Agricultural Output Value

Agriculture is the main constituent of the primary sector which is composed of (i) agriculture (ii) forestry and logging (iii) fishing, and (iv) mining and quarrying. The relative contribution of field crops, plantation (fruit) crops, and animal husbandry to the total value of agricultural output in Himachal Pradesh is presented in Table-6. The table reveals that from 1971 to 1986, at constant 1970-71 prices, the total value of agricultural output grew at the rate of 2.6 per cent per annum. Among the different constituents of the agricultural sector, the highest growth rate was recorded in the case of fruit crops, followed by livestock production; their respective outputs increased at the rates of 6.8 per cent and 4.2 per cent per annum. During the same period (i.e. 1971 to 1986) relatively slow growth (1.5 per cent per annum) was reported in the case of output from the field crop.

Because of faster growth in the fruit production and animal husbandry, their relative shares in the total value of agricultural output were increasing and thus the relative share of field crops was declining. In 1971-72 the share of field crops was 68.6 per cent in the total agricultural output of the State, and this declined to 49.3 per cent by 2000-2001. The respective shares of plantation crops and animal husbandry in the total agricultural output were 8.0 and 23.4 per cent in 1971-72, which respectively increased to 14.17 and 36.52 per cent by 2000-01. This is a

healthy trend because ecologically sound development of hilly areas requires that more and more land should be diverted away from field crops to tree crops and grasses so that disturbance to the topsoil is reduced.

The Agricultural output from 1986 to 2001, at constant 1980-81 prices has increased at the rate of 13.49 percent. The highest growth rate was in case of field crops followed by livestock output and field crops. The higher rate in growth of field crops may be due to increase in area and production of cash crops like off-season vegetables, ginger, etc in the state.

Table-6: Percent Contribution of Agriculture, Horticulture and Animal husbandry to the value of total Agricultural output in Himachal Pradesh

Years	Agriculture	Horticulture	Animal Husbandry	Value of total Agricultural output
1971-74	68.6	8.0	23.4	1448.7
1974-77	69.0	8.5	22.5	1516.9
1977-80	65.0	8.4	26.6	1625.1
1980-83	62.5	10.9	26.6	1822.3
1983-86	62.1	10.8	27.1	1996.9
Annual growth	**1.5**	**6.8**	**4.2**	**2.6**
1986-89	48.02	18.52	33.46	6497.9
1989-92	49.86	18.40	31.74	10260.3
1992-95	49.12	15.02	35.86	15024.3
1995-98	52.68	12.19	35.12	21680.7
1998-2001	52.71	11.39	35.90	30348.3
Annual growth	**14.32**	**7.82**	**16.49**	**13.49**

** State Domestic Product of Himachal Pradesh 1988-89*
*** State Domestic Product New series 1998-99 to 2000-01*
Source: Department of Economics & Statistics, Govt. of Himachal Pradesh.

CHAPTER - 3

CHALLENGES OF WTO FOR COMMERCIAL CROPS IN HIMACHAL PRADESH

3.1 Apple and Hops Import Worries Himachal Farmers

WTO has effect mainly on apple and hops grown in the Himachal Pradesh. Despite good rains in Himachal Pradesh the apple growers are not feeling comfortable. The production of apple in the state is likely to cross 5 lakh tonnes this year (2003) as against about 4.25 lakh tonnes during 2002, but they are worried how to compete with the increasing imports of neatly packaged, branded and graded foreign apples which are flooding the super market chains in the metros and other cities (Tribune 2003).

According to government data about 50,000 MT of apple was imported from China, Australia, New Zealand and the US during 2002-03. The import is likely to be doubled this year, as consumers have developed a taste for foreign apples. While the best varieties of Himachal are unable to fetch between Rs.15 and Rs.20 per kg, the imported branded apples are easily sold at Rs.100 to Rs.140 per kg. in the super markets.

About the reasons behind this jump in imports, Mr. Vinod Sharma, the Shrontha Apple Producers Cooperative Society, Shimla, admitted, “a number of apple growers in the state are not aware about the impact of proper grading, packaging and branded marketing on their profit margins. They are still producing low quality apples, selling to middle men by packing in low quality trays and packs that lower the shelf life of the produce”.

Emphasizing the need to promote branded and neatly packaged apples, Mr. Munishwar Kumar, Director Marketing and Business Development, said, “the

farmers in Himachal Pradesh will have to come forward to improve the quality of their produce For this, they can organise themselves into cooperatives to promote branded and high-quality apples through super market Chains". He added they should not use low quality trays to transport their produce.

Mr. Ishwar Dass Chahawru, Former Chairman, Zila Parishad Shimla, felt that though the state government was offering upto Rs.3.25 per kg. as support price, the farmers would not be able to reach the upper market segments and improve their profit margins by just concentrating on quantity of production. They would have to invest in inputs, grading, and packaging their product in the high quality trays and boxes to fetch good returns.

Regarding hop, it is cultivated in different parts of the world for its major use in the brewing industry for flavouring of malt beverages. The traditional taste of beer its improved by the hops. The dried female cones which have preservative and flavouring properties, are used in the manufacturing of beer. The important part of the female hop cones is the yellow iupul in glands found at the base of the bracteoles and the perianth of the flower, which contains the flavouring agents humulon and lupulon (Alpha acid).

Hops is a temperate plant native of Europe, Asia and North America. Its cultivation on commercial scale is limited to countries lying between 30^{o} to 55^{o} latitude. Having medicinal and aromatic properties, plant was initially used in herbal medicine in Europe and Eqypt. However, the use of hop as preservative and for flavouring the malt beverages was recognized in 12^{th} century A.D. In Czechoslovakia the hops as a crop came to prominence in 14^{th} century A.D. during the same period the cultivation of hops was developed in Netherlands and hopped beer became popular throughout Northern Europe. Later, it spread to U.K., U.S.A. and other countries. The fermented malt beverage industry is a major economic factor in many countries. Hops, being a essential raw material for the manufacture

of beer, is an important industrial crop. But having strict latitudinal requirements, its cultivation on commercial scale is limited to countries having temperate climate.

Hop cultivation is spread over five continents of the world but major hop growing countries are in the Northern hemisphere. The area under hops cultivation has shown a fluctuating trends but the total area under this crop world over has remained close to 80,000 ha. during the last about one and half decades. In 1991 the area increased to 91,400 Ha. with production touching 1,33,762 M.T. Europe contributes about 54 per cent of the world total production out of which 34 per cent comes from Germany alone. Germany being one of the oldest hops growing country is still maintaining its top position on the world hop map. United states ranks number two having 24 per cent share in the total hop production in the world. The erstwhile Czechoslovakia famous for its choicest aroma hops, is the third largest hop producer followed by China, U.K. Yugoslavia, Korea and Australia. Spain and Japan are also among the top ten producers.

In 1991 the international trade in hops has been to the tune of 58,314 M.T. valued at USS 35.79 million. Germany controls the world trade with about 35 per cent share of total exports. The top ten producing countries control about 97 per cent of the world exports.

The introduction of hops in India appears to be interlinked with the migration of the Aryans from central Asia. At the time of migration they brought with them culture of intoxicating drink called 'Soma', several attempts have been made by Botanists and others to identify the 'Somlata' plant used in making of 'Soma'. In the tribal areas of Himachal Pradesh (i.e. Lahaul & Spiti, Kinnaur and Pangi) wild hop plants have been used by the tribal people.

The cultivation of hop in India was introduced by Major Montogomery in 1872. Some repots indicate that Maharaja Ranbir Singh, ruler of Jammu & Kashmir

introduced hop plants in Kashmir hop garden at Sopore in 1883 and 83 acres of land brought under cultivation of hops.

The first trial cultivation of hops in India was made in 1840 at Dehradun which proved unsuccessful. Later on in 1851, Lowther proposed its introduction in Kashmir, where its cultivation was taken up on experimental scale. The cultivation of hops in Kashmir valley was initiated by Regional Research Laboratory, Jammu at its branch at Srinagar. During seventies and early eighties, it made a significant progress and by 1982 more than 50 per cent of hops' domestic requirement was met by indigenous production. Kashmir was the main producer of hops as it produced about 170 tonnes of hops during 1982. In 1975 hop cultivation was introduced in Lahaul and till mid eighties its contribution was merely 3.64 tonnes. Due to some inherent problems in Kashmir valley, hop production in this state came to stand still and now Himachal Pradesh is the only state in the country which is producing hops.

The cultivation of hops is possible in specific agro-climatic region and it has already been tried successfully in J & K and Himachal Pradesh as these areas are suitable for hop production. In these areas also there are many unexplored pockets which can be brought under this crop by educating and organizing the growers. Hops growing is labour intensive activity and with the increasing labour cost in Europe and other developed countries the state of Himachal Pradesh definitely stands to gain on this account. In India today we have everything which is required for hi-tech agriculture is available. It has also been established in many cases that the production costs in our country are definitely lower than the costs in advanced countries. Therefore, it will be advantageous to increase the area under high value crops such as hop.

However, since hop cultivation was confined to small growers and an effective marketing system could not develop for this crop, the production remained limited. The disturbances in Kashmir valley further contributed to the loss of hop production and the country had to resort to the imports of hop cones both in raw and processed

forms. Therefore, it became a challenge to reverse the out-flow of foreign exchange. This challenge has to be accepted by all concerned in the Government, research institutions, industry, as well as the farming community. With careful selection of suitable locations and adoption of scientific methods of cultivation, the hop cultivation can be made remunerative and the domestic requirements of breweries can be satisfied. After achieving the level of self sufficiency, we can enter in the global market as the varieties under cultivation in India are found to be rich in alpha acid. Concerted efforts from the research institutions and the farmers can bring in more and more area under hops not only to meet the increasing demand of the Indian beer industry but also for contributing to the earning of foreign exchange through exports.

In Himachal Pradesh, 83 hectares area is under cultivation of Hops which produced 22 tonnes Hops in 1992-93 and before 1987-88 the annual production was below 10 tonnes. Dry and cold region of the state has favourable agro-climatic conditions required for cultivation of Hops. Hence, this region which is inhabited by tribal people has vast scope of increasing area and production of this crop. In this region, Lahaul and Spiti district is the major producing area. Besides. Hop cultivation is also undertaken by the farmers of Kinnaur and Pangi areas of the State.

Hops is a cash crop to the farmers of the state. If proper measures are taken to improve the quality and quantity of Hops in Himachal Pradesh, it can further add to the income of the people of tribal region engaged in production of this crop.

This total Hops requirements of the brewery industry in the country is around 300 tonnes annually. The area under Hops in Himachal Pradesh is around 70 hectares with a total production of 94 tonnes in 1995-96 which is only 31 per cent of the total requirement. The rest 69 per cent has to be met through imports and after implementation WTO import of hops has increased due to availability on low prices. There is thus a great scope for expanding Hops cultivation in the tribal areas of the

state which will not only meet the Hops requirements of the country but will also help in upliftment of the economic conditions of the tribal community.

Hops cultivation is a capital intensive venture. A farmer has to spend large sum of money as initial cost for erection of poles and wire structures. In addition, since utilization of hops by industry is possible only in processed form, the establishment of the processing infrastructure has to go as an essential adjunct to the hop production programme. Hence, it is imperative to go in for establishment of processing centres at different locations.

The hops cultivation in the state has witnessed great upsurge during last one decade. With the rapid growth in the production, the growers faced lot of problems in disposal of their produce. They do not get desired returns of their produce for want of proper strategy of post-harvest management. The problem becomes more acute when produce remains unsold for lack of perspective buyers.

Based on the field level observations, interactions with the farmers and findings of the study, the following strategy is suggested for the economic viability of commercial crops on sustainable basis.

i) To bridge the yield gap of the crops, there is a need to develop and introduce suitable high yielding varieties. The action is required at the level of regional agricultural/horticultural universities, research farms/laboratories. This will again require an on-farm demonstration/trials for better adoption mechanism. To help these organizations to carry out need-based research, the district/regional planning units should provide some financial allocations in their annual budget proposals.

ii) Since commercial crops require high amount of purchased inputs quality and timely availability of these remains questionable. Sometimes poor quality and delay in availability of inputs create havoc and ruin the crop prospects and economy of the farmers. This aspect can also be taken

care by the district planning units by identifying suitable institution for the timely delivery of quality inputs. These institutions can be helped by allocating some funds on recoverable basis for the purchase of market-oriented inputs from genuine producers.

iii) The maladies of apple scab and recent appearance of pre-mature defoliation of leaves need sincere efforts on the part of horticultural scientists and state horticultural department should equip themselves for control of those diseases on war footing. Sincere efforts are also required to train and create awareness about the latest technical know-how of the production technologies of the farmers.

3.2 Post-harvest Management of Produce

The effective marketing strategy involves efficient post-harvest management of produce. At the producer level the product has to be prepared especially for market according to the market demand, consumer preference, etc. At the market level the involvement of market functionaries is inevitable. The services of market functionaries involves high costs, which the producer is bound to pay. An efficient marketing is the one, which minimizes the post-harvest management costs and enhances the net returns from a given transaction and further helps in expending the market for the products. The preparation of produce for market involves harvesting, grading, packing and transportation, etc. All these functions have direct bearing on the quality and profitability of the commercial crops.

CHAPTER -4

POLICY MATRIX FOR AGRICULTURAL DEVELOPMENT IN THE ERA OF WTO

The policy issues in the post WTO scenario emerging from the various policy documents of different departments as well as the responses of various stake holders have been presented in the following policy matrix tables as per directions of the co-ordination. These tables includes the likely impact of WTO clauses on the farms wherein both favourable and unfavourable effects of the clauses have been presented. The potential threats and opportunities as perceived by major stake holders concerned with the development of apple have been presented next. This analysis concentrates in bringing out the gaps policy gaps in the areas of threat as well as opportunities provided by the provisions of WTO. The analysis further extends to the presentation of state level policy matrix for repositioning/restructuring of state agriculture which diagnosis the problem, the policy elements which are missing and finally the action points to be implemented at international, national and state level for improving the scenario in this respect. This analysis is self explanatory and no further detailed discussion has been presented.

Likely Impact of WTO Clauses on Apple Orchardist of Himachal Pradesh.

Important WTO clauses	Possible favourable effects	Possible unfavourable effects
1. Agreements on Agriculture (AOA):		
(a) Domestic support	The possible favourable effects emerge from Green Box measures where in the Govt. can compensate the farmers from natural disasters and undertake the programmes like income insurance, crop insurance and income safety net programmes under the special and differential treatment for developing countries, the investment subsidy and agricultural input services available to low income groups are not to be counted in Aggregate Measure of Support (AMS).	The main apprehension arises from the provisions of Amber Box which have been divided into product specific subsidies and non-product specific subsidies like subsidy on input i.e. fertilizers electricity and irrigation. However, in Himachal Pradesh the AMS under Amber Box is below the limit of 13 percent as recommended for developing countries.
(b) Export Competition	Himachal Pradesh has favourable conditions for growing temperate fruits and vegetables, which have scope of export. Export subsidies of the kind listed in the agreement which attract reduction commitments are non existent in India. Hence, there is scope to subsidized the export and make it more competitive in the international markets.	In Himachal Pradesh the cost of production of commercial crops is relatively higher and it cannot be subsidized beyond an aggregate limit of 13 per cent under the provisions of Amber Box. Secondly the product of the state is sometimes un-exportable as it does not qualify the norms of Agreement on Application of Sanitary and Phyto-sanitary measures (SPS).
Market Access	In Himachal Pradesh the production of cereals pulses and oilseeds is deficient. The availability of such products can be increased through imports and the resources can be diverted to the production of such crops having export potentials like fruits and vegetables. This will bring down the cost of production making the domestic products internationally competitive.	The conversion of non-tariff barriers to tariff barriers may not be prove to be deterrent for the importers as the aggregate cost of imported products may not be significantly different from the domestic product. This might lead to the substitution of domestic product with imports and may prove detrimental for the domestic producers.
2. SPS & TBT Clauses	The imposition of requirements of SPS & TBT will help in meeting the sanitary and phytrosanetary and technical requirement of importing countries will help in boosting the exports of fruits and vegetable from the state.	The SPS and TBT agreements contain promises of financial and technical assistance for the developing countries therefore these clauses have no possible unfavourable effects on Himachal agricultural economy.
3. TRIPS (and possibly TRIMS)	The favourable aspect of TRIPS emerges from the fact that under it, it is required provide protection by intellectual property rights to such plant varieties which are ethnic plant varieties having a potentials of commercial application in other parts of the world, either by patent or by effective sui- generris legislation or a combination of both.	Like most developing countries Himachal Pradesh is likely to face two sets of difficulties in this area. On one hand it lacks scientific capability to innovate as well as the expertise and necessary institutional development to use the IPR as a tool for development.

Potential Threats and Opportunities for Himachal Apple Growers as Perceived by major Stakeholders of State Agriculture

Sources of threat and opportunities	Potential threats with reasoning	Observed gaps in policy leading to no risk coverage of threats	Potential opportunities with reasoning	Observed gaps in policy leading to inadequate realization of potential gains
1.Market for factor inputs and services (consider each input/service separately):				
(A) Insecticides/Pesticides	g. Spurious material. h. High costs i. Low availability j. Drug resistance k. Phyto-sanitary (High Toxicity) l. Improper application	f. Lack of quality control. g. Low rate of subsidy. h. Irregular supply. i. Spray schedule not properly adopted. j. Provision of IPM not properly enforced.	d. Low cost material. e. Good quality material. f. High effectiveness	d. Free entry of suppliers in the market not allowed. e. Free entry of suppliers in the market not allowed f. Free entry of suppliers in the market not allowed
(B) Plant material	h. High cost i. Low suitability for local climate. j. Capital intensive. k. Labour intensive l. High expertise required. m. Poor demand in domestic markets. n. Competition from imported apple.	h. Low number of nurseries and high transportation cost. i. Little efforts for identify the compatible varieties. j. No gap. k. No gap. l. No gap. m. No mention in policy document n. No mention in policy document	h. New root stock i. High density plantation j. High productivity. k. Good quality. l. International demand. m. Disease resistance. n. High profitability	h. No. Gap. i. Less importance to small and marginal farmers. j. No gap. k. No. gap. l. No mention in policy. m. No gap. n. No. gap.
3. Fertilizer	d. Phyto-sanitary conditions. e. High cost. f. Less availability.	d. Provision of Bio-fertilizer. e. Provision of subsidy. f. No. mention in the policy document	d. Increased availability. e. Good quality. f. Low costs	d. Open markets for fertilizer. e. No. gap. f. No. gap.
4. Production Technology:	f. Low adoption rates. g. Capital intensive h. Low replicability. i. Lack of capability for adoption.	f. No. gap g. Provision for subsidy. h. No. gap i. No. gap.	d. Availability of number as technologies. e. Cost effective. f. Higher	d. Identification of suitable technology. e. No. gap. f. No. gap.

	j. Poor economic condition.	j. No. gap.	productivity and quality.	
5. Credit	c. Low availability to marginal and small farmers. d. Diversion of credit for unproductive uses	c. No. gap. d. No. gap.	c. Low interest rates. d. Easy availability	c. No. gap. d. No. gap.
6. Markets for Apple	h. Enterance of imported apple in domestic markets i. High cost of production. j. Inadequate grading and packing. k. Poor quality. l. High cost of transportation. m. Poor post harvest management. n. Poor demand of delicious varieties in foreign markets.	h. No mention in policy document. i. No. mention in policy document. j. Extinction drive and new grading and packing houses. k. No. gap. l. Thrust on road net work and gavity rope ways. m. Inadequate treatment. n. No. gap.	e. Good demand in domestic markets. f. Scope for export of newly planted variety apple. g. Good demanding neighbouring countries. h. Availability of new market technologies.	e. No. gap. f. No. mention in policy document. g. No mention in policy document. h. No. gap.
7. Natural Resources	f. Soil Erosion of non-horticultural land. g. Deforestation. h. Bio-Diversity reduction. i. Rainfed cultivation. j. Air and water pollution.	f. No. gap. g. No. gap. h. Awareness but no policy. i. No. gap. j. No. mention in policy.	e. Harneshing of nitche. f. Best use of marginal land. g. Increase in green cover. h. Check in soil erosion of horticultural land.	e. No. gap. f. No. gap. g. Secondary benefit but no mention in policy document. h. Secondary benefit but no mention in policy document.
8. Human Resources	a. Health hazard the to use of chemicals	No. mention in policy	d. Employment generation. e. Improved health. f. Improved quality of life.	d. No. gap. e. No. gap. f. No. gap.

State Level Matrix for Repositioning/Restructuring of Himachal Apple Growers.

Issues	Sector	WTO	Other Factors	Policy climate	National	State
Supply of reliable planting material	f. Govt. line departments. g. Private agencies. h. Co-operatives. i. Farmers		c. Non-availability. d. Uncertified material leading to apple of other than intended variety, low productivity and poor quality.	**Technological:** Certification rules not properly enforced. **Institution:** Lack of testing and certifying equipments and agencies. **Price:** Large differentially between good and poor quality material.	National horticultural board should evolved uniform policy at national level for all fruits.	Department of horticulture should establish laboratories with modern equipment and trained personals.
Deteriorating phytrosanatory conditions:	e. Govt. line, departments. f. Suppliers of chemicals. g. Co-operatives/federation. h. Farmers	Under the stipulations of WTO, the fruit being presently produced becomes unfit for international markets due to violation of Phyto-sanitary conditions	Increased level of chemicals are being used in order to maintain the production level and maintenance/enhancement of quality	**Technological:** Alternative technologies for insect and pest management not being introduced and popularised. **Institutional:** Ineffectiveness of institutional mechanism for transfer of IPM and other eco-friendly technologies at farm level.		Introduction and popularize of IPM Bio-fertilizer and organic manuring
Marketing challenges due to increased imports of apples	Ministry of agriculture, GOI, APEDA, NHB and private traders	Increased quantity of imported apples due to scaling down of duty structure posing challenges to domestic producers on quality and price front.	High-income group consumers are proffering imported fruits as consumption of imported fruits is becoming a status symbol.	**Technology:** Poor quality of produce, poor grading and packing of domestic apple. **Institutions:** Enforcement of standardization norms with legal back-up. Price:	APEDA and NHB should evolve policy for improving the quality and post harvest technology so that domestic producers can compete with the imports.	State department of horticulture HPMC, Agro industry corporation should ensure the improvement in quality and post harvest management through technological and institutional intervention.

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