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His Majesty's Government

National Planning Commission Secretariat

Central Monitoring and Evaluation Division

Singh Durbar, Kathmandu

Enhancing the Competitive Strength of the Nepalese Agricultural Produces

FINAL REPORT

Submitted by:

Full Bright Consultancy (Pvt.) Ltd.

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Full Bright Consultancy (Pvt.) Ltd.
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EXECUTIVE SUMMARY

COMPETITIVENESS OF AGRICULTURE SECTOR

Need for Promoting Competitiveness

Trade has helped attain global economic growth for the past thirty years and has proven to be a powerful strategy of accelerating economic development for developing countries. For agriculture, the period has seen tenfold increase in its global exports. Dynamism in international agricultural trade has come mainly from a growing market for non-traditional products. In traditional products, most developing countries face an environment of significant protectionism by the developed countries.

A new competitiveness agenda for Nepal, including development of production pockets and development of economic zones could be of great potential. There are four areas that help in improving the competitiveness of its agricultural sector. They are: (i) supporting modernization of agribusiness; (ii) promoting agricultural exports; (iii) improving the effectiveness in service delivery; and (iv) strengthening public-private partnership

For enhancing the competitive strength of agriculture and broad based agricultural growth the primary emphasis has been given to the non-traditional and value added commercial agriculture and boost exports as the potential engine for future agricultural growth. Domestic demand does not have the same potential to support sustained growth, because Nepal's domestic market is small and characterized by widespread poverty. However, in world markets, traditional agricultural products are highly protected by the developed and developing countries. For this reason, a focus on non-traditional items has been given for developing countries like Nepal.

Input Market and Prices Support

Prior to the Eighth Five-Year Plan (1992 - 1997), the government of Nepal had the policy to provide subsidy to the farmers on chemical fertilizers. But it was felt that the subsidy could not be enjoyed by the poor, so move was initiated to remove the subsidy. In the process to translate the policy into implementation, the Government reduced the amount of subsidy since fiscal year 1997/98 and totally removed it since fiscal year 1999/2000. With the withdrawal of subsidy, private sector is involved in the importation and distribution of chemical fertilizers.

The withdrawal of fertilizer subsidy and public sector monopoly on import had a strong impact on its price level, marketing volume and above all, its application by farmers. Despite the increase in price of fertilizers after the withdrawal of subsidy, sales volume increased. It shows that when the government was supplying fertilizers, the price was low; but the supply was not adequate. Farmers had to face acute shortages at the peak period. After the deregulation and entry of private sector, supply has increased and farmers are able to use more fertilizers.

Another important intervention of the government was minimum support price to home cereals. But it was found that minimum support price could not influence farm gate price because of very small volume of purchase by the public sector due to the inadequacy of budget and limited storage capacity. Government has introduced a policy to withdraw its

involvement in marketing food commodities launched with a view to control prices. After 1998/99, prices of food and agricultural commodities are determined solely by the market mechanism. Government's food price policy has been to avail food grains in high hills by increasing production of potential cereals and income of poor families. During the liberalization period, consumers' real prices of food items, non-food items and overall index have increased in decreasing rates.

The government plays a limited role in the agricultural product supply by implementing commodity production programs and reducing transaction costs. Government has provided agricultural market information and developed market infrastructure to reduce the marketing costs.

Modernization of Agri-Business

One of the major aspects in agricultural trade is quality. The consumers from the importing countries are becoming increasingly quality conscious and are demanding stricter quality requirements. Exporting countries have to comply with the specifications laid down by the regulatory agencies in the importing countries. Most of the exporting countries have built up their facilities to meet the requirements as prescribed by the importing countries.

To improve the present situation of agricultural export the farmers, as well all other stakeholders, should be aware of such quality requirements. Creation of basic awareness on the quality needs among the stakeholders, adoption of technologies for quality production, development of necessary infrastructure like drying yards, grading and shorting centers, storage facilities are needed to boost up the agricultural production and marketing. A system of agriculture market information is not functioning effectively and is poorly placed prioritized and this service is highly inadequate. Despite considerable advances in the last decades in infrastructure, Nepal has considerable deficiencies in infrastructure needed for production resulting in impeding the competitiveness of Nepali agricultural products in foreign markets.

It is unrealistic to think that a transformation can be brought about instantly from the traditional Nepali agrarian pattern into a highly specialized commercial farming system. For small farmers, exclusive reliance on cash crops can be even more precarious than pure subsistence agriculture, since risks of price fluctuations are added to the uncertainty of nature. Diversified or mixed farming therefore represents a logical first step in the transition from subsistence to specialized production.

Forward linkage of the agriculture sector with the industry will help in the improvement of agriculture. The forward linkage of agriculture with processing and preserving of fruits and vegetables is very week. The share of these industries in the total agro-based products is only 0.2%. Institutional development of agriculture producers is one of the important aspects in strengthening the linkages between agriculture and industries.

Competitiveness in Export Markets

The trading of agricultural products with other countries depends not only on their availability within the country but it is also influenced by the familiarity of the products with the foreign markets. Generally the agricultural products are bulky, the possibility of their

trading with the overseas markets is very much influenced by the geographical distance and the cost of transportation. Therefore, most of the agricultural products of Nepal are traded with the neighboring countries. Nevertheless there are some specialized agricultural products that are exported to overseas markets of Europe irrespective of their volume.

Nepal possesses great opportunity in the production and marketing of fresh vegetables and fruits. Off-season vegetables should be considered as one of the most promising export commodities targeting the big Indian cities like Delhi, Lucknow, Kolkata, Kanpur and Siligudhi. Nepal has a traditional trade linkage with these cities and can use this linkage for the promotion of Nepal's off-season products. For this purpose, she should build her capacity both in terms of production, post harvest management and marketing networks. Special emphasis should be given to address the SPS requirements of India's central and state government.

KEY ISSUES RELATED TO COMPETITIVENESS OF NEPALI AGRI-PRODUCES

The analysis made in the study has identified various key issues related to the competitiveness of Nepal's agricultural produces. They have been categorized into four phases: pre-production, production, post-production and export-import phases, to present it in a more systematic way.

Pre-Production Phase

Insufficient Physical Infrastructure: Due to insufficient infrastructure and inadequate utilization of available infrastructure, production and transaction costs of Nepali agricultural produces are very high that makes them difficult to compete in its markets.

Gender Mainstreaming: Women are playing vital role in the agriculture sector. Their contribution to agriculture production is 60.5% and it is continuously increasing. But women's control over and access to agricultural inputs is very low. Their ownership over agriculture land is hardly 4.4%.

Research and Extension: Functioning of quality extension and research system is the prerequisite for the increased competitiveness in the market by generating and providing not only technical but also economic and marketing know how to the farmers. Research and extension help use the genetically improved seeds, as well as development of new varieties based on market demands. In Nepal, such research and extension activities have so far heavily depended on governmental institutions.

Zoning and Investment: Nepal's trading partners are involving themselves in the bulk productions that are cheap and competitive. In Nepal, at present, there are many pocket areas where various types of exportable agricultural products are grown. But the government, the big trading houses and the financial institutions, do not properly support agriculture sector. Investment in this sector is still minimum. Special zones for exportable products are not developed.

Opportunities for Nepalese produces: Nepal has opportunity to export agricultural products to the big markets of India and China. The comparative advantages of the

Nepali climatic and topographic situation can be helpful in developing the competitiveness of the Nepali products in the international markets. Therefore, there is a need for the production of such products in Nepal that command good price in the markets of India, China and overseas. Nepal is already exporting relatively high value produces to India. She has further opportunity to produce more high value crops and export them to that country. She can develop her vegetables markets in the Arab countries as well.

Production Phase

Inputs supply: Growth of agricultural produces in the past has occurred to a great extent because of increase in inputs (labor, land, fertilizers and etc). Growth in the use of fertilizers was very good before liberalization. But, in the earlier stage after removed of the subsidy, its uses had decreased. Slight increase was noticed in the cultivated land especially before liberalization. Use of modern machinery in agriculture sector is minimal. Adequate and timely supply of quality inputs such as seeds, plant protection chemicals, bio-pesticides, agricultural machinery and agricultural credit at reasonable rates to farmers constitute the key problems faced by the sector even today.

Land Management: Due to fragmented and small size of landholdings, it is difficult to introduce modern technology in agriculture. There is no legal provision to develop lease markets for increasing the size of the holdings for giving private lands on lease for cultivation and for agro-business purposes.

Cropping Patterns: The slow growth in the non-agricultural activities in the country has made us dependent on agriculture. The increased labor force is to be absorbed by this sector. It has created a problem of underemployment in agriculture. This sort of state in agriculture did not make it possible to release land for the cultivation of other commercial crops either. In recent years, cropping intensity has increased to some extent. The cropping patterns has also been changed from pure low-productivity subsistence farm to mixed agriculture, where part of the farm produces are grown for meeting the household demands for food and part of it for sale to the commercial markets. However, the concept of specialized farming guided by the principles of the commercial market is still new to Nepali farmers.

Risk Management: As in most traditional societies agriculture is not just an economic activity; it is a way of life in Nepal. Farmers are used to produce and consume food products. These practices did not release land for the cultivation of other commercial crops, which could be used for commercial purposes. Farmers have to depend on the food even by cultivating the marginal land. The marginal farmers do not like to replace the traditional crops by the new ones for fear that it would not get proper market which will put them in further hardship. To avoid this risk the farmers try to retain cultivation of traditional crops for food even if it is not economically viable. This has thwarted any attempt towards commercialization of agriculture in Nepal. There is no provision for farmers insurance for any losses from sowing of the crops to the post-harvest operations, including market fluctuations in the prices of agricultural commodities they produce.

Low Total Factor Productivity Growth Rate: On an aggregate, about 49% of the growth in agricultural gross domestic product is due to total factor productivity and rest is due to factor inputs. Growth of agricultural gross domestic product in the past has occurred to a great extent because of increase in inputs (labor, land and other inputs).

Increase in the factors of production increases the costs of production. This slow increase in the total factor productivity is increasing the cost of production per unit making Nepalese agricultural products less competitive in the international markets. Nepal's growth of productivity is relatively small as compared to her trading partners India and China. The growth rate of total factor productivity was higher before liberalization than after it. However, the percentage share of total factor productivity in agricultural gross domestic product has increased from 46% before liberalization to nearly 56% after it. It indicates that there is a dire need for the efficient use of factors of production. Main cause of the low growth rate of total factor productivity is the low application of science and technology in order to take advantage of market opportunities. Lack of adaptation of new technology such as higher-yielding seeds, better land management, irrigation and integrated pest control system total factor productivity is low in Nepal.

Production Performance: Weak growth of cereals over the last decades and lack of diversification resulted in poor performance of agricultural sector as a whole and could not contribute to high economic growth as envisaged by the periodic plans. Several cash and high value crops like potato, sugarcane, citrus, apple, vegetable, tea and cardamom had strong performance. However, diversification is barely noticeable at the aggregate level owing to small share in the total cropped area. The growth observed in the fruits production is solely due to the growth in area and the productivity ratio is unexpectedly low. The performance of vegetables has been encouraging during the last decade. Diverse agro-ecological conditions of Nepal offer high potentials for off-season vegetables production with considerable internal and external markets for them. The present off-season vegetable production is basically targeted towards import substitution. The yield levels are still low resulting in low competitiveness.

Post Production Phase

Post Harvest Management: Post harvest management played a vital role in agricultural competitiveness. In Nepal, post harvest management is not getting due priority. Due to poor post harvest management of agricultural produces some of the Nepalese commodities are unable to reach the markets with quality standard and with prospects of competitiveness. Majorities of the farmers sell their agriculture products immediately after harvest at low price with few value additions. There are no cold storage facilities in the rural areas. So the farmers who are involved in producing perishable commodities are compelled to sell their produce immediately after the harvest. Even the farmers who produce non-perishable agriculture products sell them after the harvest for lack of knowledge about the markets.

Market Information and Access: Market information system of agriculture is not functioning effectively in Nepal. Inadequate availability of such information is a serious bottleneck in commercialization of agricultural sector. Traders are the major source of market information about the products of the farmers. Other institutions like District Agriculture Development Office, co-operatives, and non-governmental organizations have been playing minor role in disseminating market information. Due to the lack of access to modern information technology like email, internet and telephone facilities, most of the producers have little idea about international market opportunities. Without reliable market information producers are facing difficulties in establishing linkages with the traders. So they are bound to sell their produces at a low price.

Forward Linkages: The agricultural production still has a weak forward linkage with most of the agro-based industries. The majority of the agriculture production units are very small with poor investment capacity. Low productivity coupled with high production cost and small production volume makes the Nepali agriculture less attractive for the development of processing industries closely related to this sector.

Quality and its Standardization: Qualities of many of the Nepali agricultural products are quite competitive in the markets of neighboring countries. One of the major aspects in agriculture trade is quality. The consumers are becoming increasingly quality conscious and demanding stricter quality requirements. Exporting countries have to comply with the specifications laid down by the regulatory agencies in importing countries. Nepali farmers are not fully aware of the prescribed standards relating to cleanliness, pesticides residuals and microbial load. Standardization and grading is a prerequisite for improved marketing. It has become a fundamental marketing function without which the prospects of the Nepali products entering into international markets will be diminishing. Present quality standardization mechanism does not comply with the international market requirements.

Export / Import Phase

Trade Pattern of Agricultural Produces: On average, over the 1990s, agricultural exports represented only 3.4% of agricultural gross domestic product, whereas total exports represented 10.31% of the gross domestic product, an indication of relatively little trade orientation of Nepali agriculture. Similarly, agricultural imports were 7.7% of agricultural gross domestic product in the same period. It also indicates that agricultural exports are less than the imports. Nepal has introduced a policy of liberalization. However, to benefit from the changing policy environment and ensure high level of agricultural growth it needs to create a conducive environment for shifting of incentives to support production of non-traditional crops for export rather than supporting the production of commodities that are mainly for imports substitution.

Opportunity and Threat of WTO: The impacts of accession to the WTO on agriculture are mixed. Whether we get benefited or not depends on how we respond to the challenges and opportunities emerging therefrom. The WTO provisions for trade in services will increase the mobility of agricultural technicians. Nepali present quarantine mechanism needs to be improved. WTO Agreement tends to emphasize on commercial agriculture. Therefore, there is a need to increase domestic support to adopt commercial farming. Agricultural trade became more protected in the developed countries after the establishment of WTO. In Nepal the agricultural sector is left to compete in the open market without necessary hardening and acclimatization of the farmers. As WTO opens the international market, Nepali farmers may face difficulty in competing in the new scenario. Therefore, we need to facilitate the production of major commodities like food grains, fruits, vegetables, meat and milk and their processed products for protecting the interests of our farmers through appropriate policy measure.

Real Exchange Rate and Trade with India: The real exchange rate of Nepal's currency is found to be lower than the nominal exchange rate and it is decreasing over the years. This is because the wholesale price index of Nepal is increasing faster than that of India. A decrease in the real exchange rate leads to the decrease in the competitiveness of

Nepali products as compared to that of India. Imports of all major agricultural commodities, with the exception of rice, are found to be inelastic to the changes in real exchange rate. It is because, most of the imports of agricultural products are basic needs and we have very limited alternatives to them. It is found that in one percent increase in the real exchange rate of Nepali currency with that of Indian there is about 15.13% decrease in the import of rice. In general, it can be concluded that rice is a sensitive product and its farmers are particularly vulnerable to the imports that increase with the decrease of real exchange rate.

Country and Product Diversification: Due to the traditional business linkages, India is the major trade partner for Nepal. The former is absorbing about 30% of the total exports. In the case of agricultural trade, the linkages with India are even closer. Agricultural exports to India represent about 72% of the total agricultural exports and imports from that currency were 55% of total imports during the 1990s. It clearly indicates that Nepali agricultural trade is heavily dependent on India. In the case of agriculture, Nepal exports relatively high value produces such as vegetable ghee, tee, cardamom, ginger, vegetables etc and import mainly traditional food grains. However, value addition of the exportable produces can be improved. Nepal has little trade turnover with the third countries other than India. Only a few products have been exported to other countries. Linkages in trading of agricultural products with the markets overseas countries is not developed at all except for the items like tea, coffee, spices and dry fruits. Due to the lack of market information, Nepali producers are unable to capture the opportunity providing by the overseas markets. The traders of the developed countries are not properly aware of Nepali products and our traders are not motivated to trade agricultural products in the distant markets.

Price Competition with India: Nepali coarse rice price is competitive in the Indian market during the harvesting season. The fine rice is not likely to be price competitive. Due to bulk production in India, Nepal is not price competitive in potato and onion as well. Vegetable ghee is found to be price competitive in the Indian market. Nepal is neither price competitive in mustard seed nor in mustard oil. Expect few products, Nepali agricultural commodities are not at all price competitive with India. Agricultural subsidies provided by the Indian Government and application of modern technology to bulk farming also help make the Indian produces more price competitive an against those of Nepal. But Nepal has not adopted effective means to reduce prices either by increasing efficiency or by introducing mechanized farming for high quality products.

Business Linkages with Trading Partners: Trading depends on the linkages between the trading partners. For Nepal, the trade linkages with overseas countries in respect of agricultural products have been established through Indian traders. She has ample prospects for exporting vegetables and fruits to the markets of Tibet. However, due to the lack of agricultural business linkages it cannot be materialized. Trading of agricultural products with the markets of overseas countries is not developed except for a few products. Agricultural products demanded in the markets of Europe and America are not grown in Nepal. Market information system of such products is not developed properly here. The land locked nature of the country has escalated the cost of handling of the agricultural products because they are weight-loosing type. They are less competitive to export to other countries except India. the farmers are adversely affected whenever the demand for such commodities declines in the Indian market.

MEASURES FOR ENHANCING COMPETITIVE STRENGTH OF NEPALI AGRICULTURE

The analysis of the factors responsible for enhancing the competitiveness in Nepali agriculture is basically influenced by the degrees of transformation process. At this moment it is very much needed to understand the stages of development. It is generally accepted that the process of transformation of small scale-subsistence farming to commercial farming generally takes place in three stages. The first and the most primitive is the pure, low-productivity subsistence farming. The second stage is what might be called "diversified" or "mixed" agriculture. Finally, the third stage represents the "modern" farming. The process of transformation in the last two stages is a difficult and time consuming because it is not related simply to the economic factors but to several non-economic factors that cannot be immediately changed. As in most traditional societies agriculture in Nepal is not just an economic activity; it is a way of life in Nepal.

Policy Measures for Enhancing Competitiveness of Nepalese Agricultural Products

In order to boost the competitiveness of Nepali agriculture by addressing key issues and bottlenecks identified in the preceding chapters the following major recommendations grouped under four phases are proposed:

Pre-Production Phase

- Special attention should be given to evolve new location-specific and economically viable improved varieties of agricultural crop through adoption of biotechnology particularly, genetic modification. Expansion of seeds and plants certification system with private sector participation should receive a high priority.
- It is imperative to develop agriculture zones based on products in various parts of the country to develop competitiveness of Nepali agricultural products and increase investment in this sector. Products specific zone development and encouragement of private /NGOs sector in timely supply of inputs and serviced delivery and link it with the market network could lead to increase the volume of production. Farmers should be encouraged to change the cropping patterns and cultivating single commercial crops in one zone.
- Protection of plant varieties through a sui generis legislation should be granted to encourage research and breeding of new varieties particularly in the private sector in line with Nepal's obligations under TRIPS Agreement.
- Sensitization of the farming community with the environmental concerns should receive high priority. Decentralized institutional changes should be effective to make the extension system farmer-responsible, farmer-accountable and broad based.
- The involvement of co-operatives and the private sector should be encouraged for agricultural extension activities. Private sector investments in agriculture to be encouraged more particularly in areas like agricultural research, human resource development, post-harvest management and marketing.
- Mainstreaming gender concerns in agriculture should also receive higher attention. Appropriate structural, functional and institutional measures are to be developed to empower women, to increase their control over resources, to build their capabilities and to improve their access to inputs & technology.
- Considerable transaction costs can be greatly reduced by targeted policies and investments to improve transport and utilities infrastructure. The government should

also work together with the private sector in developing dry ports and other facilities. Due priority should also be given to improve or renovate the available infrastructure.

Production Phase

- To increase the volume of production and make it competitive, it is necessary to increase the cultivation area of non-food / high valued crops. Product specific zone development and timely supply of required inputs and link it with the market network could lead to increase in the volume of production
- Government regulatory mechanism should be strengthened to assure adequate and timely supply of quality inputs such as seeds, fertilizers, plant protection chemicals, bio-pesticides, agricultural machinery and credit to farmers at reasonable rates.
- There is a need for the efficient use of factors of production in agriculture so as to increase the total factor productivity. The key to increasing agricultural productivity is the application of modern technology, better land management, irrigation and pest control system in order to take advantage of market opportunities
- Nepal is still depending on traditional technology of farming. Adaptation of new technology is desirable to increase efficiency. To give incentives to the farmers, waiver of customs, duty, VAT and excise duty on materials such as farm machinery and implements that are used as inputs in agricultural production, post harvest storage and processing is proposed to be reconsidered.
- In the first stage, government should encourage mix farming to reduce the risk of cropping pattern changes. Therefore the improvement of small-scale mixed farming practices are desirable because they will help in raising farm incomes and average yields and will also effectively absorb underutilized rural labors which could lead us toward the achievement of real pro-poor oriented rural development.
- In order to timely and adequate credit to farmers it is necessary to institutionalize and further strengthen the rural and farm credit system, thereby improving banks' outreach and their credit flows to the poor in sustainable manner.
- To manage the risk of the farmers, it is necessary to make the National Agriculture Insurance Scheme. It is proposed to provide a package insurance policy for the farmers.
- Nepal needs to produce such products in which she has more competitive edge or has more comparative advantages or geographical indication or some specific characteristics of the products.
- It is necessary to develop lease markets for increasing the size of the land holdings by introducing legal provisions for giving private lands on lease for cultivation and agro-business.

Post Production Phase

- Emphasis should be given to the improvement of post-harvest management and quality regulation mechanism. Farmers should also be trained about harvesting methods, post harvest handling, packaging, and storage systems.
- Emphasis is to be laid on the development of marketing infrastructure and techniques of preservation, storage and transportation with a view to reducing post-harvest losses and ensuring better returns to the farmers.

- Nepali producers are not organized as traders as far as trading of their products is concerned. Therefore they are to be organized so that their bargaining capacity is increased.
- The database for the agricultural sector should be strengthened for greater reliability of estimates and forecasting. Without access to market information farmers are heavily dependent on traders' information, which are not much reliable. So it is proposed that the Agricultural Information Center be strengthened with participation of private sector.
- Quality awareness should be provided to the farmers and Nepal's standardization mechanism need to be improved so as to match it with international standards. For improving the quality of the products R & D on quality control are needed both in production as well as in post-harvest product handling.

Export Phase

- To accelerate export of agricultural products, it is necessary to develop separate agricultural export policy. National agriculture and trade policies, rules and regulations should be harmonized with the WTO standards.
- A two-fold long term strategy of diversification of agricultural produces and value additions enabling production system to respond to external environment and creating export demand for the commodities produced in the country is proposed with a view to providing the farmers incremental income from export earnings. A favorable economic environment and supportive public management system has been proposed for the promotion of agricultural exports.
- Quarantine, both of exports and imports, should be given particular attention so that Nepalese agriculture is protected from the ingress of exotic pests and diseases.
- Nepal has to develop business linkages with possible agro-trading partner-countries especially with countries lying within the middle income range, which might have demand for Nepali products. They could be the countries of South East Asia, East Asia and West Asia. Therefore, there is a need for the production of such products in Nepal that fetch good prices in the nearby markets of India and China. To establish the business linkages with overseas markets, it is necessary to produce high value crops and focus on post-harvest management is essentially needed.
- There is a need to enhance, at first, price competitiveness of agricultural produces through various supportive measures. In case if the price competitiveness is not possible to achieve, quality competitiveness needs to be realized.
- Misalignment of fixed nominal equilibrium rate of Nepalese currency with the Indian currency does not have much effect on the export and domestic competitiveness in agricultural products except for a few commodities. Thus, at the present moment there is no need to change the exchange rate to promote competitiveness of Nepali agricultural products.

The findings of the present study have shown that Nepal has some comparative advantages in some agricultural products; but the competitiveness of such products has not yet been developed. Consequently such products are not in a position to compete with the products of other countries at the same time. Therefore there is a strong need for the support of the government to increase the competitive strengths of such products.

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ABBREVIATIONS

AEC	Agro Enterprise Center
AGDP	Agricultural Gross Domestic Product
AIC	Agriculture Input Corporation
AICL	Agriculture Inputs Company Limited
AMIS	Agricultural Management Information System
AMS	Aggregate Measure of Support
AOA	Agreement on Agriculture
APP	Agricultural Perspective Plan
APPPC	Asia Pacific Plant Protection Commission
CBS	Central Bureau of Statistics
CMED	Central Monitoring and Evaluation Division
DADO	District Agriculture Development Office
DOA	Department of Agriculture
EC	European Community
EPZ	Export Promotion Zone
EU	European Union
FGD	Focus Group Discussion
FNCCI	Federation of Nepalese Chamber of Commerce and Industries
GAP	Good Agricultural Practices
GATT	General Agreement on Tariff and Trade
GDP	Gross Domestic Product
GMO	Genetically Modified Organisms
GMP	Good Management Practices
GO	Governmental Organization
HACCP	Hazardous Analyses of Critical Points
HDI	Human Development Index
HDR	Human Development Report
HH	Household
HMGN	His Majesty's Government of Nepal
HPI	Human Poverty Index
HVC	High Value Crops
IMF	International Monetary Fund
INR	Initial Negotiating Right
IPPC	International Plant Protection Convention
ISO	International Organization for Standardization
LDC	Least Developed Countries
LSGA	Local Self Government Act
ME	Monitoring and Evaluation
MFN	Most Favored Nation
MOAC	Ministry of Agriculture and Co-operatives

NER	Nominal Equilibrium Rate
NFC	Nepal Food Corporation
NGO	Non-Governmental Organization
NLSS	Nepal Living Standard Survey
NPCS	National Planning Commission Secretariat
NRB	Nepal Rastra Bank
NRs.	Nepalese Rupees
NSCL	National Seeds Company Limited
NTMs	Non-Tariff Measures
ODC	Other Duty and Charges
OIC	Office of Epizootics
PIC	Prior Informed Consent
PPP	Purchasing Power Parity
PSM	Phytosanitarium Measures
QMS	Quality Measurement System
RER	Real Exchange Rate
SAFTA	South Asian Free Trade Area
SAPTA	SAARC Preferential Trading Arrangement
SMS	Subject Matter Specialist
SPS	Sanitary and Psytosanitary Measures
TBT	Technical Barrier to Trade
TFP	Total Factor Productivity
TOR	Terms of Reference
TPC	Trade Promotion Center
TRQ	Tariff Rate Quota
TRIPS	Trade Related Aspects of Intellectual Property Rights
UK	United Kingdom
UNDP	United Nations Development Programme
US	United States
VDC	Village Development Committee
WTO	World Trade Organization

CHAPTER I: INTRODUCTION

1.1 BACKGROUND

1.1.1 National Scenario

Nepal is predominantly an agricultural country, with the majority of the population living in the rural areas and depending mostly on agriculture for their livelihood. The population continues to grow at the rate of 2.27% and the possibility of the expansion of the agricultural land is limited. Agricultural productivity leaves a wide gap compared to what is achievable. Since the majority of the population depends on agriculture characterized by low productivity and small landholdings, it is not surprising that poverty is widespread in the country covering 38% of the population and concentrated mainly in rural areas.

Considering its physiographic structure, Nepal is bound to remain an essentially a rural country with predominantly agricultural population. Therefore, for the foreseeable future, the one and only way for ensuring possible well-being of the vast majority of the Nepali populace is to achieve effective rural development which can bring about effective alleviation of rural poverty.

1.1.2 Socio-Economic Condition

Nepal is one of the least developed and the poorest countries in the world. Per capita income is estimated to be in the order of US$ 248 for 2002/3 (Economic Survey, 2003). Economic growth of the country has not improved substantially so as to overtake population growth. The growing population has overshadowed the gains achieved in agriculture. Nepal's Living Standard Survey, 1996, conducted by the Central Bureau of Statistics estimated the incidence of poverty in Nepal to be around 42% (World Bank 1999). It was estimated at 38% in 2000/2001. Human Development Report (2002) estimates a human poverty index (HPI) for Nepal at 43.4, with a rank of 76 out of 88 developing countries. Literacy rate of 53.74% and female literacy of 42.49% (CBS 2003) is one of the lowest in the SAARC region. Chronic malnutrition among children below 5 years of age (54.1%), and maternal mortality of 415/100,000 remains among the highest in the world (Human Development in South Asia, 2001, and Nepal Human Development Report 2002, UNDP 2002, CBS 2003). Similarly the human development index (HDI) of 0.49 (UNDP HDR, 2002) ranks Nepal at position 142 worldwide. The infant mortality rate is 64.2 per 1000 live birth. The life expectancy at birth is 61.9 years.

The average gross domestic product (GDP) growth rate over the period of Ninth Five Year Plan is estimated to have been 3.6%, whereas it is only 3.3% for agriculture sector, considerably lower than the Plan's projection (6.5% and 4.0% respectively). The growth rate of last fiscal year of Ninth Five Year Plan has been the lowest in the last 14 years (0.6). Agriculture is the major sector of economy, which engage 66% of economically active population and this sector has contributed 39.3% to the GDP.

1.2 AGRICULTURAL SECTOR

1.2.1 General

Nepal's economy is dependent on the agricultural sector for income and employment generation. Agriculture provides food, income and employment to the majority of the labour force. In spite of high priorities given to agricultural development from the very beginning, this sector has not kept up with the desired speed (Ninth Plan). In the past two decades, the agricultural growth rate has slowed down to 3% per annum. This is about a half percentage point more than the population growth. The current rate of agricultural growth is unable to create enough rural employment to absorb the additions to the labour force leading to out-migration. Due to the slow growth in productivity and diminishing farm sizes, food insecurity has increased in the rural agricultural households.

The low and yearly fluctuating agricultural growth rates, poor access to resources, inadequate social service delivery, low sharing of information and knowledge, limited economic and non-economic choices and limited coverage of targeted programs are some of the reasons for the continued high incidence of poverty. Increasing agricultural productivity has been the prime focus of His Majesty's Government of Nepal (HMGN).

1.2.2 Development Objective and Target

Poverty alleviation is the main objective of Tenth Five Year Plan and sectoral policy and programs are focused on the fulfillment of this objective. The Tenth Plan has set objectives with a determination of bringing down the number of those falling below the poverty line from 38% from the end of the Ninth Plan (2001/02) to 30% by 2006/07. To reduce poverty through the creation of income and employment generating activities in the key sectors, it has been envisaged to achieve 6.2% of overall GDP growth rate, in normal scenario and 4.3% in alternative scenario together with 4.1% and 2.8% respectively in agriculture sector.

1.3 STUDY RATIONALE

The agricultural sector has been taken as the engine of overall economic growth and the Agriculture Perspective Plan (APP) has been taken up as the main basis for increasing production, providing food security, increasing employment and income and ultimately contributing to poverty alleviation. The APP aims at raising the annual agriculture growth rate from less than 3% to 5%. The strategy for the hills and mountains is devoted to livestock products and other high-value crops, the demand for which is expected to come partly from a more prosperous Terai and partly from the export markets. The hills and mountains have a comparative advantage in these products. The APP lays special emphasis on increasing the use of modern inputs, such as chemical fertilizer.

In the recent years some important policy changes have occurred including liberalization, decentralization and public private partnership. The major area of reform effecting the agriculture sector are deregulation of fertilizer marketing, elimination of subsidies in irrigation, involvement of private sector/non-governmental organizations (NGOs) in

service delivery and devolution of power and resources to the local bodies. In the case of fertilizer, subsidies have been eliminated and the private sector has been allowed to participate in the production, import and distribution system. Similarly, subsidies have been eliminated on sallow tube-wells. The impact of these policy reforms in the performance of agriculture sector is yet to be clear. The Local Self-Governance Act of 1999 envisages that the local government will takeover the responsibility of agricultural planning, extension and animal health progressively over period. Recognizing the role of private sector and NGOs, the government plans and programs have laid increasing emphasis on the public-private partnership (Agriculture Research and Extension Project; Third Livestock Development Project; Crop Diversification Project; APP Support Project) for the improvement of service delivery system.

In order to achieve the objective of poverty reduction, agricultural sector needs to be modernized by promoting diversification and commercialization and exploiting the comparative advantages of Nepali agro-ecological conditions. Production of high value market oriented commercial crops will help improve the income generation and food security situation, providing employment opportunities to women, help increase value addition, and bring diversification and commercialization in agriculture. In the context of accession to the World Trade Organization (WTO) it is essential that agriculture is modernized and more efficient and competitive. Against this background, the food crop oriented subsistence agricultural system has to be transformed into diversified and commercialized production system of high value crops, which is comparatively more profitable than other crops in specific ecosystem. This will help promote agricultural industry, increase employment opportunities and improve economic growth rate.

In the above context competitiveness of Nepali agricultural products has become an important issue that requires urgent study and - from the perspectives of both domestic and foreign markets. The promotion of liberal trade policy has also created more open environment in the trade of agricultural products. It has led to the creation of more competitive environment even in the domestic market. On one hand, a number of Nepali agricultural products, which are used as raw materials by agro-industries, are lacking access to domestic market: on the other hand, domestic agro-industries are dependent on imported raw materials. Two decades ago, Nepal was a net food exporter country; but now it has become a net food importer. It shows that competitive strengths of Nepali agricultural produces are not satisfactory.

1.4 OBJECTIVES OF THE STUDY

The overall objective of the study is to assess the impact of economic policies in agricultural production and productivity and to explore the means of making such products to those of its trading partners in terms of quality and price competitive. However, the specific objectives of the study are as follows:

- To examine issues concerning the productivity and diversification of agriculture,
- To assess impact of liberalization measures adopted by the government in agriculture sector,

- To assess the patterns of use of inputs by farmers in a changing government support system,
- To address factors that are hampering the commercialization and exports of the agricultural products,
- To recommend future course of action to be adopted by the Government keeping in view the factors such as economic liberalization, Nepal's accession to the regimes of WTO, SAARC Preferential Trading Arrangement (SAPTA) and South Asian Free Trade Area (SAFTA).

1.5 SCOPE OF WORKS

Major activities proposed under the study comprise the following:

- Reviewing the literature about the agriculture development as well as liberalization,
- Field visits to assess the patterns of crop intensity, crop diversification, commercialization, use of inputs, service delivery by public agencies,
- Studying total factor productivity (TFP) of the agriculture sector,
- Finding out real exchange rate (RER) and terms of trade vis-à-vis the major or would be trading partners of agricultural produces.
- Recommending policy to be adopted by the Government for harnessing the agriculture sector's potentials competitiveness.

1.6 ACTIVITIES

While remaining within the broad scope and the objectives of the study the Consultant carried out the following activities:

- Related government plans, policies, programs, reports and studies were reviewed.
- Trade, exchange rate and agricultural policies of major trading partners of agricultural products were studied.
- The total factor productivity of the agriculture sector of Nepal, the patterns of terms of trade of agriculture products with major or potentials trading partners were calculated.
- Real exchange rate with the currencies of the major trading partners was determined and elasticities of exports and imports of agricultural produces with respect to change in RER were calculated.
- The competitiveness of agricultural produces in domestic market was assessed in terms of:
  - Agricultural production and productivity trends including their economic and financial aspects,
  - Price support and input subsidy system including tariff on imported goods, impact of liberalization of fertilizer trade and other input markets,
  - Input supplies and products marketing (channels, costs etc.),
  - Product quality and standardization,
  - Comparative analysis of the features of agricultural products and production system, their policy environment in Nepal and competing country markets,
  - Forward linkage with agro-industry sector (issues and constraints),

- The competitiveness in export market was evaluated with respect to:
  - Agricultural export policy and procedures in Nepal,
  - Comparative advantages and competitiveness of major exportable commodities,
  - Tariff and non-tariff policies/barriers for Nepalese agricultural products in potential export markets,
  - Patterns of agricultural trade and trends in product and market diversification,
  - Support services and facilities being provided to the farmers in neighboring countries in relation to their counterparts in Nepal.
- Policy measures are recommended in the following areas:
  - Priority investment packages for agriculture development and promotion of exportable commodities,
  - Measures for risk reduction in agriculture production and related business,
  - Policy support packages for enhancing competitiveness of Nepali agricultural products and their phased action plan.

1.7 PROJECT LOCATION AND DESCRIPTION

The study is conducted at national level. Secondary data were supplemented with field surveys conducted in the production areas of the purposively selected districts. The districts have been selected based on the ecological belt, cropping system, potentiality and their orientation towards commercialization. The study locations within the selected districts were chosen in consultation with the respective districts' line agencies and attention was paid to include the intensive production pockets of the listed crops. However, the survey area selection was made considering the level of commercialization of the pockets. From each sample district a commercial pocket, a semi-commercial pocket and a less developed area were selected for survey on the basis of information provided by the district line agencies.

Fig 1.1: Location Map of the Study Area

1.8 METHODOLOGY

1.8.1 Methodological Framework

The purpose of the study is to examine in-depth and overall benefits and the effectiveness of the agricultural produces and their competitive strengths. As the subsistence agriculture is still predominant in Nepal and adoption of commercial production system is limited to certain areas, limited number of commodities have been considered for the study purpose assuming that they would be produced on a greater commercial scale or have potentials for commercial production.

Primary and secondary levels of information have been collected for the study purposes. Primary level of information were obtained from the enumeration of the selected Village Development Committees of the sampled districts, Focus Group Discussions, with farmers and traders, interaction with officers at the centre and district, and field observation. Similarly, secondary data and information were obtained from concerned agencies like National Planning Commission Secretariat (NPCS), Trade Promotion Centre (TPC), Nepal Rastra Bank (NRB), Ministry of Agriculture and Cooperatives, Department of Agriculture, district and field based offices of the related Governmental Organizations (GOs) and NGOs. The information and result have been analyzed in relation with the study objectives given in the TOR.

1.8.2 Analytical Framework

For achieving specific objectives of the study following analytical framework was adopted:

1.8.2.1 Review of Government Plans, Policies, Programs, Reports and Studies

The study reviewed the following documents:

- Ninth Plan
- Mid term Evaluation of Ninth Plan
- Agriculture Perspective Plan
- Agriculture Sector Performance Review
- Medium Term Expenditure Framework
- Tenth Plan
- Study reports on Impact of Projected Pocket Package Programs
- Assessment Study on Cropping Intensity Development under Pocket Package Program in Agriculture Research and Extension Project (AREP) districts
- Costs of Production Studies of Department of Agriculture (DOA)
- Marketing Studies of DOA
- Nepal Trade and Competitiveness Study
- Agreement on Agriculture
- Agreement on Application of Sanitary and Phytosanitary Measures (SPS)
- Agreement on Technical Barriers to Trade (TBT)
- Documents on SAFTA and SAPTA

1.8.2.2 The Competitiveness of Agricultural Products

The competitiveness of agricultural produces in domestic and export market and the ways of promoting the agricultural produces in the export market including review of trade, exchange rate and agricultural policies of the major trading partners have been assessed and explored.

Primary and secondary information have been analyzed by assessing the present situation and future perspectives of agricultural produces in domestic and export markets. Information on production and productivity trends, commodity diversification, service delivery, availability of inputs, accessibility, economic and financial cost of production, price support and input subsidy system including tariff on imported goods, impact of liberalization of fertilizer trade and other input markets, input supplies and product marketing channels, marketing cost, product quality and standardization, forward linkage were also analyzed. Similarly, export and import data/information, trade policy, trade barriers, exchange rate, availability of adequate product handling infrastructures etc were also assessed and conclusions were drawn on the present situation and future perspectives of domestic and export markets for Nepalese agricultural produces.

1.8.2.3 Calculation and Analysis of the Total Factor Productivity in Agricultural Sector

The standard model of economic growth seeks to explain the long-term trend in the potential output of an economy by breaking it down into two parts: that part which can be explained by the growth in inputs used in production and that which can be explained by improvements in the efficiency with which these inputs are used. The latter is called total factor productivity (TFP) growth. The TFP is estimated by using the following equation:

$$\text{TFP index} = \frac{\text{value added index}}{(\text{labour index}^{\text{labour share}}) * (\text{capital index}^{\text{capital share}})}$$

Where:

- Value added index is the agricultural gross domestic product (AGDP) index at constant price for 25 years 1974/75 =1.00.
- Labour index is the labour supply during the same period.
- Capital index is the index for land, irrigation and fertilizer (NPK) use combined with appropriate weights.
- Labour share is based on cost of production reported by the government.
- Capital share is defined as (1 - labour share)

1.8.2.4 Determination of the RER & Elasticity of Export and Import of Agriculture Produces

The real exchange rate (RER) can serve as a proxy for a country's international competitiveness (Edwards, 1988). An increase in the RER represents an improvement in the country's international competitiveness given relative prices in the rest of the world. Conversely, a decrease in the RER indicates a decline in the country's international competitiveness. The RER was estimated using the following formula:

(1) $RER = E_0P^* / P$

Where E_0 is the nominal exchange rate, expressed as local currency per unit of foreign currency, P* is the foreign price index for tradable (approximated by the wholesome price index), and P is the domestic price index, presumably heavily weighted by the home goods sector (as with the consumer price index).

In order to estimate the elasticities of export/import of agricultural commodities, the following model is used:

(2) $$Y_t = \beta_1 X_t^{B_2}$$

$$LogY_t = Log\beta_1 + \beta_2 LogX_t + e_t$$

Where,

Y_t = export/import at time 't'
B_1 = intercept
B_2 = Elasticity of export/import with respect to RER
X_t = RER at time 't"

1.8.2.5 Calculation of Price Competitiveness

Price competitiveness of the Nepali agricultural produces has been calculated by using the formula:

$$\textit{Price competitiveness} = \frac{\textit{cif price of import of the commodity X nominal exchange rate}}{\textit{fob price of export of the commodity}}$$

1.8.3 Data, Study Cluster, Sampling and Tools

1.8.3.1 Primary Data and Information

Primary data have been collected using variety of methods and tools. These include: household survey in the selected districts; in-depth interview and focus group discussion with key informants and stakeholders from the identified area; field observation by study team. Interaction was also held with traders, input suppliers, experts and extension agents.

1.8.3.2 Selection of Sample Districts and Study Location

The sample districts were selected from two agro-ecological zones – hills and Terai of four development regions (Eastern, Central, Western and Far Western). The commodities have been grouped considering the agro-ecological potentials as demonstrated by the crops:

Table 1.1: Selection of Sample Districts and Commodities

Physiographic Regions	Eastern	Central	Western	Mid & Far Western
Terai	**Jhapa**	**Chitwan**		**Kailali**
	Paddy, Wheat,	Maize, Vegetables		Wheat, lentils Fruits
Mid hills	**Ilam**	**Kavre**	**Palpa**	**Dadeldhura**
	Big Cardamom, Ginger	Vegetables, Fruits Oil seeds	Vegetables, Fruits	Vegetables, Fruits, Potato

The selection of cluster within the district was made after considering the following bases:

- Interaction with the district level government agencies
- Detailed discussions with key informants.
- Observation of all the study areas by field team.
- Limitation of time and availability of resources for the study.
- Type of economic and commercial activities carried out in that area.

1.8.3.3 Sampling

Sample Design

Considering the nature of the study, each selected district was divided into three strata namely commercial area, moderately commercial-oriented area and potentially commercial-area in terms of agricultural produces in consultation with District Agricultural Development Office (DADO) and experts. One Village Development Committee was selected randomly from each stratum and two wards were selected from the selected VDC for household selection purpose. The criteria adopted for the selection of survey areas were as follows:

Table 1.2: Survey Area Selection Criteria

A Commercial	B Moderately Commercial	C Potential for Commercialization
1. Farmers		
▪ Professional farmers ▪ Specialization in some high value crops (HVC)	▪ Emerging profession of farming ▪ Little specialization HVC	▪ Farming as a way of living ▪ More involved in cereals production
2. Marketing Facility		
▪ Agriculture products exported ▪ Link with regional and international market ▪ Developed market mechanism	▪ Agriculture product link with exporter ▪ High potential for future market development	▪ Market surplus is there but marketing channel not developed
3. Infrastructure developed form of transport		
▪ Rural electricity easily available ▪ Developed cold storage facilities are widely available	▪ Easy access of farmers by road ▪ Electricity available in all area of VDC ▪ Cold storage available at a limited scale	▪ Road infrastructure increasingly used but still difficult to access many production areas ▪ Electricity available to any few areas or in the surrounding villages ▪ Cold storage not available

A Commercial	B Moderately Commercial	C Potential for Commercialization
4. Institution		
▪ Agricultural Information system available ▪ Developed trade association	▪ Emerging agricultural information system ▪ Emerging farmers organization and trade associations	▪ Absence of agricultural market information system ▪ Ineffective farmers organization and trade associations

Sample Size

Pre-tasted semi-structured questionnaire were used for the purpose of household survey. The sample size of the household survey was as following.

Table 1.3: Number of Sample by District

District	Crop	No of Sample Household
Jhapa	Paddy	30
Ilam	Cardamom, ginger	44
Chitwan	Wheat, maize and oilseed	46
Kavre	Maize, vegetables, fruits and potato	60
Palpa	Vegetable and ginger	25
Kailali	Wheat, banana, lentils and oilseed	76
Dadeldhura	Vegetables and potato	19
Total		**300**

Study Tools Used

Observations

The study team also collected information through direct field observations. The team visited the selected area to observe the present situation of production and productivity. They verified the recorded information with the actual situation in that area.

Focus Group Discussion

In order to get additional information on production and market management in the survey areas and to generate new ideas for the future development potentials, the study team organized focus group discussions (FGD) with different groups of people at different sites are study area.

Key Informants

The consultants interacted with a large number of key informants to collect additional data/information on agricultural system of the area. This interaction provided a lot of insights into the intended subject. At the field level interactions were held with SMS JT/JTA, NGOs representatives engaged in agricultural development. Interactions were also held at the centre level.

Secondary Data and Information

Secondary information were collected from relevant studies, publications, reports, and records of concerned agencies such as the NPCS, Trade Promotion Center (TPC), CBS, Nepal Rastrya Bank, Ministry of Agriculture and Co-operative (MOAC), DOA, other line

ministries, various divisions and directorates under the Department of Agriculture, district level line agencies, Federation of Nepali Chamber of Commerce and Industries (FNCCI), Agro Enterprise Center (AEC). The study team also reviewed relevant literature published by concerned agencies and similar study reports previously prepared by the firm.

Table 1.4: Type and Source of Data Collected for the Study Purpose

Production Data	Input Data	Price	Policy / Plan
• Cereal Crops (paddy, wheat, maize, millet, barley) • Cash crops (oil seed, potato, tobacco, sugarcane, jute) • Pulse crops • Horticulture crops (fruits, vegetables)	Input data for: Land, Animal Power, Labour, Fertilizer, Water, Improved seed, Chemicals	Price of major commodities	Government plan and policy of Nepal and neighboring country
Sources			
• Statistical information on Nepali agriculture (SINA) • Economic surveys • Other relevant sources • Field data	• SINA • Economic surveys • Agriculture census (CBS) • Field data	• NRB • FNCCI • AEC • SINA • AMIB • Field data	APP, Ninth Plan, Tenth Plan, various documents published by NPCS, MOAC, MOF, MOC, FNCCI, NARC, Agriculture Sector Performance Review, Medium Term Expenditure Framework, Mid Term Evaluation of Ninth Plan, documents on WTO, SAPTA, SAFTA

Review of trade along with exchange rate and agricultural policies of the major trading partners was made by collecting available documents on agriculture policy of India.

1.8.4 Limitations

The study was carried out considering the following limitations:

- Available secondary data compiled and produced by the concerned agencies were used to assess the sectoral performance and in calculating the TFP and RER.
- With regard to the information on neighboring countries, only the agriculture policy of India was assessed and reviewed to see its implications on the competitiveness of Nepali agricultural products.
- The analysis of the competitiveness of crops has been limited to ten crops only: paddy, wheat, maize, vegetables, oilseeds, potato, lentil, cardamom, ginger and fruits (citrus and banana)
- The study is confined to crop sub-sector of agriculture and livestock sub-sector is excluded.

CHAPTER II: SECTOR REVIEW AND KEY ISSUES

2.1 POVERTY REDUCTION AND AGRICULTURAL GROWTH

2.1.1 Overview of Agricultural Sector

Agriculture is the backbone of Nepali economy. The share of agriculture in GDP is 39% and it engages 66% of the labor force of the country. With the initiation of the planned development, priority was given to the development of agriculture with an emphasis on the introduction of the new methods of cultivation. During this period, various irrigation projects were constructed, new technologies were initiated, varieties of new crops were introduced, institutional loans were provided to the people in the rural areas, and use of chemical fertilizer was increased. In the Fifth Five-year Plan (1975), emphasis was laid on the development of livestock in the mountains, fruits in the hills and food grains in the plains Terai regions. Increasing production and supply of nutrition to the producer households was the thrust of agricultural development till the seventies. In place of the traditional and supply-oriented approach of agricultural development, demand-oriented approach was introduced in the Eighth Five-Year Plan (1990-95). In the subsequent years, it has been emphasized to produce agricultural crops and commodities that are highly demanded by the market.

Nepal's agriculture is still heavily dependent on rainfalls since the development of irrigation facilities has been very slow. Only 33% of the cultivated land has irrigation facility. Limited irrigation and unreliability of rainfalls have resulted in fluctuating trends in the agricultural production. Limited irrigation facility has been the underlying impediment and has always hindered agricultural growth in Nepal.

In 1990, average agricultural growth remained 2.70% per year, whereas GDP growth was 4.72% Per Year. Slow growth of agricultural production brought down the overall growth of the national economy. One of the major reasons for the slow growth of agriculture is related to the plantation of the traditional crops. Cereals play determining role in the growth of agriculture since they (paddy, maize, wheat, millet and barley) cover over 77% of the total cropped area. The cereal growth was at the rate of 2.6% in the 1990s; so it could not contribute to the rapid agricultural growth. The growth of other crops is faster than that of cereals. Annual growth of cash crops consisting of oilseeds, potato and sugarcane is about 5% over the last decade. Encouraging growth of sugarcane at the rate of 6.7% per annum and potato at the rate of 5.8% per annum contributed to the encouraging growth of cash crops in aggregate. Covering 8% of the cultivated area, pulses contributed significantly to the agricultural output by growing at the rate of 4.3% per annum. The area covered by fruit cultivation has been small but it is expanding rapidly. The production of fruits grew by 7% in the last decade and the vegetables by 3.7% per annum.

Traditionally, agriculture has been taken as a means to maintain family members. A large number of farm families still continue this approach even today. The commercialization of agriculture sector with business orientations emerged since the late 1980s. In the late

1980s and 1990s, marketing infrastructure was built in the major urban centers of the country that encouraged the farmers to grow commercial crops and commodities and earn better returns.

Agriculture in Nepal is still beset with several problems. They are: dependence on monsoon, small and fragmented size of land-holding, use of traditional technology, low cropping intensity, high man land ratio, out migration of the influential and educated people from agriculture and outflow of resources from rural areas. These are the problems that have caused for low productivity in agriculture. Low productivity is the main reason for widespread poverty. Most of the poor in Nepal live in rural areas and are engaged in agriculture. During the 1990s, a positive trend had occurred in agricultural trade due to the liberalized economic policy. Though agricultural trade was still a small fraction of the overall agricultural GDP, its export growth rose from an average growth of 3% over the first period of the 1990s to an average growth of 37% in the second part of the decade, thus tremendously contributing to narrow-down the trade gap between Nepal and India. However, the sharp rise in agricultural export to India was brought about by the increase in export of vegetable ghee, which is not actually a product of Nepali agriculture.

Over the course of the 1990s, the share of the total budget to the agricultural sector decreased from 15.9 in the first part of the 1990s to 11.3% of total budget in the second part of the 1990s. But during the 1990s it was endeavored to bring overall improvement in agriculture through the changes in policies and programs that have emphasized the strategic role of agriculture have promoted participation and decentralization and have focused on market orientations.

2.1.2 Share of Agriculture in National Economy

Agriculture sector contributed nearly two-third of the GDP till seventies. It had occupied 65.03% share of GDP of Nepal in 1974/75, and its contribution declined gradually in the 1980s and 1990s. Agriculture sector contributed 50.62% share of GDP in 1989/90, but it went down to 39.32% in 2001/2 (**Table 2.1**).

Table 2.1: Sectoral Contribution to GDP

S. No.	Sector	1984/85	2001/02
1.	Agriculture, fishery and forestry	51.22	39.32
2.	Non agriculture sector	48.78	60.68
a.	Mining and quarrying	0.44	0.51
b.	Manufacturing	5.65	8.14
c.	Electricity, gas and water	0.41	2.01
d.	Construction	8.46	10.48
e.	Trade, restaurant and hotel	10.26	10.02
f.	Transport and communication	6.03	8.60
g.	Finance and real estate	8.97	10.79
h.	Community social services	8.56	10.12

Source: Agricultural Statistics of Nepal, MOAC, Kathmandu, 2001/2.

Rapid growth of non-agricultural sector increased its share to GDP and significantly reduced that of agricultural sector from 1984/85 to 2001/02. It also indicates that industrial and service sectors have large potentials in Nepal.

In the total agricultural GDP, food grains cover 34%, livestock cover 29%, cash crops take 8%, 9% by fishery, 1% by forestry, and 19% by horticulture and others.

2.1.3 Agriculture for Poverty Reduction

Agriculture is the main source of livelihood for majority of the Nepali population. But the level of income particularly in agriculture is very low in Nepal by international standards. With a GDP of about $246 in 2001, Nepal is among the poorest countries in the world. The GDP in agricultural sector is even lower at less than $140 per agricultural worker.

According to the Nepal Living Standard Survey 1996, about 40% of the agricultural households with land have less than 0.5 ha. Given the small land holding size (average holding size in 1990/91 was 0.94 ha), it is not surprising that the majority of the agricultural population is poor. The combination of low productivity and small land size furnish part of the explanation for wide a widespread poverty in rural areas of Nepal.

Agricultural growth performance over the decade 1990/91 to 1999/2000 has not been very tangible. With an average growth rate of 2.7%, agricultural remains one of the lowest components of the GDP and barely kept pace with the growth of population estimated at 2.27%. Per capita growth of GDP in agriculture (0.43%) still falls far short of the goal of 2% as proposed in the APP.

Rural poverty is highly correlated with agricultural production. Many rural households receive a high proportion of income from agriculture. The existence of high incidence of poverty throughout the country limits the potential for domestic demand for agricultural products especially for higher-value non-staple foods to serve as a major source of engine for growth.

The distribution across Nepal's population of income, land, assets in general, education and access to markets are characterized by high inequality, despite years of struggle for more equity. Assets, incomes and opportunities are also unequally distributed in geographical terms. A large number of low skilled, low-paid farm laborers, landless or with small landholdings, compete for employment in the agricultural sector.

2.2 SECTORAL STRUCTURE AND ITS ECONOMIC IMPORTANCE

Nepali agricultural sector is based on the production of basic staple grains. Generally, land is used for the production of food and mostly in rain-fed condition. About 77% of cropped area is planted with cereal crops. However, the share of basic staple grains contributes only about 30% of agricultural GDP, while export crops contribute to some 50% (BCN, 2001).

Agricultural exports account for roughly 30-40% of Nepal's total exports to India. Indeed, agricultural export to the overseas country is very nominal (7% of total agriculture export).

Agriculture uses little capital in terms of machinery and equipment which indicates continuation of low intensity traditional farming (low input – low output technology), which represents great potential for either diversifying into organic farming and /or moving into high input, high output agriculture.

The agrarian structure of Nepal is dualistic. This complicates the task of promoting broad based growth because policies are likely to have differentiated impacts. On the one hand, commercialization of agriculture is practiced with regard to some crops and in some areas of the country, on the other hand, agriculture is practiced as a way of life for making sustenance of the people living in rural areas of the country.

Small size farmers' category constitutes 68.63% of rural households; but accounts for only 30.47% of total land. They not only have limited land asset but also low levels of education. This combination of poor access to land and low human capital assets broadly characterizes the poor in rural Nepal. The medium and large farmers constitute 30.2% of rural households whereas they own 69.5% of total land.

Table 2.2: Land Distribution

Total Area of Holding	Holding		Percent	
	Number	Area (ha)	HH	Area
Holding without land (A)	32,087.00	1,525.20		
Holding with land (B)	2,703,963.00	2,597,445.70		
under 0.1 ha	172,985.00	9,569.80		
0.1 ha and under 0.2 ha	263,784.00	37,993.40		
0.2 ha and under 0.5 ha	729,267.00	244,779.00		
0.5 ha and under 1 ha	711,666.00	499,540.90		
<1 ha	1,877,702.00	791,883.10	68.63	30.47
1 ha and under 2 ha	529,467.00	716,532.90		
2 ha and under 3 ha	168,471.00	400,272.50		
3 ha and under 4 ha	59,574.00	202,360.80		
4 ha and under 5 ha	28,591.00	125,727.80		
<5 ha	786,103.00	1,444,894.00	28.73	55.59
5 ha and under 10 ha	31,952.00	209,338.10		
10 ha and over	8,206.00	151,330.50		
>5 ha	40,158.00	360,668.60	1.47	13.88
Total (A+B)	2,736,050.00	2,598,970.90		

Source: CBS

These socio-economic dimensions of rural poverty in Nepal highlight the critical importance of the agricultural sector in any broad based strategy to reduce poverty. Unless the dualistic structure of agricultural production in rural areas is tackled, the poor, the landless, the subsistence farmers and other small-scale farmers may reap minimal benefits from overall growth in the sector. Thus, growth-oriented policies will need to be complemented by public spending targeted to investment in human capital among the poor and socially disadvantaged.

2.3 KEY FEATURES OF NEPALI AGRICULTURE

2.3.1 Overview of Input-Output Analysis of Nepalese Agriculture

2.3.1.1 Incremental Capital-Output Ratio & Projected Growth Rates in Agricultural Sector

The overall Incremental Capital-Output Ratio (ICOR) is reported to be 4.3%. The agricultural sector has ICOR of 2.52. Growth rate in agricultural value added is historically 3.4% per annum. The employment elasticity for the period 1985-2000 is the lowest for agriculture (0.39) (with the exception of constructions 0.21). The income per employment is also the lowest in agriculture NRs. 15.6 per employment and the highest in finance and real estate (NRs. 726) at 1999/00 price (Shrestha and Sapkota, 2002).

Table 2.3: Agricultural Growth Rates of Final Demand (Net)

Sub-sector	Growth Rate (%)	Adjusted Growth Rate (%)
Cereal Crops1	6.0	3.9
Cash Crops2	5.8	2.4
Other Crops3	5.2	3.4
Livestock and Fisheries	4.7	4.1
Food and Beverages	6.5	5.9
National	6.3	6.3

Source: Shrestha and Sapkota, 2002

Table 2.4: Projection of Agricultural Gross Output at 1999/00 Prices (NRs. in million)

Sub-sector	2002	2003	2004	2005	2006	2007	Growth Rate
Cereal Crops	95,214	99,022	103,189	107,700	112,588	117,884	4.4
Cash Crops	14,838	15,314	15,850	16,437	17,076	17,769	3.7
Other crops	18,471	19,061	19,682	20,346	21,065	21,846	3.4
Livestock and Fisheries	31,845	33,072	34,152	35,429	37,109	39,327	4.3
Forestry	14,848	15,319	15,844	16,415	17,032	17,697	3.6
Agriculture	175,216	181,787	188,717	196,327	204,870	214,523	4.1
Gross Output National	711,251	753,060	799,135	849,695	905,347	966,690	6.3

Source: Shrestha and Sapkota, 2002

2.3.1.2 Destination of Agricultural Outputs

Shrestha and Sapkota (2002) have analyzed how the gross output is distributed among the final demand components because users of products are different and their consumption have different impact on the economy. It is estimated that cash crops (13%) are the major agriculture export items. Rests of the agricultural products are for domestic consumption.

Table 2.5: Destination of Agricultural Gross Output

Sub-sector	Private Consumption	Govt. Consumption	Private Gross Fixed Capital Formation	Public Gross Fixed Capital Formation	Change in Stock	Exports	Gross Output	% Share
Cereal Crops	79,372	265	47	23	(5,241)	1,515	75,981	12.38
Cash Crops	10,496	62	6	3	1,454	1,821	13,842	2.26
Other Crops	13,586	11	1	1	13,384	105	27,087	4.41
Livestock & Fisheries	21,268	45	545	3	26,680	1,197	49,738	8.10
Food and Beverages	62,180	964	91	46	(24,950)	5,226	43,558	7.10

Source: Shrestha and Sapkota, 2002

[1] Cereal crops consist of paddy, wheat, maize, millet and barley.
[2] Cash crops include sugarcane, tobacco, potato, oilseeds, jute, tea and coffee
[3] Other crops are fruits, vegetables, pulse and spices

Table 2.6: Allocation of Agricultural Net Output (NRs. in million)

Sub-sector	Private Consumption	Govt. Consumption	Private Gross Fixed Capital Formation	Public Gross Fixed Capital Formation	Change in Stock	Exports	Net Output	% Share
Cereal Crops	58,453	195	34	17	(3,859)	1,116	55,956	15.3
Cash Crops	7,714	45	4	2	1,069	1,338	10,172	2.8
Other Crops	11,416	9	1	1	11,247	88	22,762	6.2
Livestock and Fisheries	18,829	40	483	3	23,621	1,060	44,036	12.0
Food and Beverages	15,198	236	22	11	(6,098)	1,277	10,646	2.9

Source: Shrestha and Sapkota, 2002

2.3.1.3 Factor Requirement in Agricultural Sector

In order to satisfy the increased total demand for agricultural output, aggregate agricultural gross output will have to be increased by NRs. 39 billion during the Tenth Plan period. The additional requirement of labor and capital resources in value terms will be NRs. 11.5 billion and NRs. 19 billion respectively. The shares of incremental return to labor and capital to GDP at factor cost are 37% and 62% respectively.

Table 2.7: Targeted Additional Gross Output and GDP at Factor Cost and Additional Factors Requirements during Plan Period (NRs. In Million)

Sub-sector	Targeted Additional Gross Output	Targeted Additional AGDP at Factor Cost	Factors Requirements During Tenth Plan			
			Return to Labor	Return to Capital	% Share of Factor Requirements in AGDP	
					Return to Labor	Return to Capital
Cereal Crops	22,670	16,696	8,352	8,178	50.0	49.0
Cash Crops	2,931	2,154	798	1,343	37.1	62.3
Other Crops (Fruits, Vegetables and Others)	3,375	2,836	481	2,325	17.0	82.0
Livestock and Fisheries	7,482	6,624	1,192	5,384	18.0	81.3
Forestry	2,850	2,778	665	1,985	23.9	71.5
Agriculture	39,307	31,087	11,489	19,214	37.0	61.8
Food and Beverages	25,586	6,254	660	5,321	10.6	85.1

Source: Shrestha and Sapkota, 2002.

2.3.2 Comparative Features of Agriculture Products and Production System

The cropping pattern has changed after the adaptation of liberalization policies in 1984/85. Before liberalization, 43.03% of cropped area was covered by paddy, whereas 18.09% by maize, 14.12% by wheat, 7.12% by pulses, 4.18% by millet, 1.75% by fruits, 0.218% by vegetables.

Table 2.8: Share of Area Coverage by Cereals, 1981/82-2001/2 (area in thousand ha)

Crop	1981/82		2001/2	
	Hectare	Percent	Hectare	Percent
Paddy	1377.00	43.03	1517.00	35.51
Maize	579.00	18.09	826.00	19.34
Millet	134.00	4.19	258.00	6.04
Wheat	452.00	14.13	667.00	15.61
Barley	27.00	0.84	28.00	0.66
Oilseeds	128.00	4.00	188.00	4.40
Potato	66.00	2.06	135.00	3.16
Tobacco	9.00	0.28	4.00	0.09

Crop	1981/82		2001/2	
	Hectare	Percent	Hectare	Percent
Sugarcane	17.00	0.53	59.00	1.38
Jute	27.00	0.84	12.00	0.28
Pulses	228.00	7.13	307.00	7.19
Fruits	56.00	1.75	78.00	1.83
Vegetables	93.00	0.22	161.00	3.77
Fishery	7.00	0.22	9.00	0.21
Spices	NA	NA	3.00	0.07
Honey	NA	NA	6.00	0.14
Coffee	NA	NA	6.00	0.14
Tea	NA	NA	8.00	0.19
Total	**3200.00**	**100.00**	**4272.00**	**100.00**

Source: Agricultural Statistics of Nepal, MOAC, 1984/85, 2001/2. NA= not available

In the 1980s, farmers around the irrigated areas were provided technical support to run intensive cultivation through block development policy. In these irrigated areas, farmers tried to intensify the use of land but could not do farming as an enterprise, due mainly to the lack of adequate knowledge in commercial farming. They could not identify market opportunities that could encourage them for planning commercial crops.

In the 1990s, cropping pattern changed in such a way that paddy area decreased to 35% of total cropped area, whereas maize and wheat areas increased to some extent in 2001/2. Areas of vegetables encouragingly increased to 3.76% from the previous level. Fruits and pulses areas increased to some extent. Remarkably, spices, coffee, tea and honey had taken significant place in the cropping pattern of 2001/2.

After the introduction of liberal agricultural policies, a division in the Ministry of Agriculture and Cooperatives was established for developing agriculture as an enterprise. Moreover, the tendency of establishing farm as a commercial enterprise on the basis of the market opportunities was evolved. It has helped to develop the commercial agriculture.

Land is being cultivated intensively from 1980s onwards. In 1981/82, cropping intensity was 145% whereas it increased to 175% in 1994/95. Data were not available up to late 1990s. But it can be said that the intensity has been further increased. Such change in intensity has also positive impact on AGDP.

2.3.3 Key Features of Nepalese Agriculture Exports and Imports

In order to rationalize the production in agriculture it is imperative to make Nepali agriculture sensitive to domestic and international markets. It will help in the diversification and expansion of agricultural base of Nepal. With its expansion and diversification it can be more export oriented. This will help in driving Nepal's future economic growth that will act positively for poverty reduction. There are two reasons for this. First, the size of the agricultural sector within Nepal's economy indicates that strong growth in agriculture is a necessary condition for any broad-based, overall economic growth. Second, there is a potential to produce exportable crops in Nepal. The international competitiveness of Nepali agricultural exports is constrained in numerous ways. They are mentioned in the subsequent sub sections.

2.3.3.1 Export of Small Size of Non Traditional Goods

Compared to the exports of nonagricultural products the export of agricultural products is limited and the value of exports is of relatively small in size (**Table 2.9**). Most of the agricultural products are exported to the neighboring countries. Some agricultural products like tea, coffee, spices are also exported to the countries of Europe. Because of the small size of export, the bargaining power of Nepali exporters is limited and weak.

Table 2.9: Export of Major Agricultural Commodities (NRs. in million)

Year	Jute	Pulses	Cardamom	Ginger	Rice Bran Oil	Dried ginger	Vegetables	Animal Ghee	Fruits	Rice
1992	457.00	14.30	113.70	84.60	94.00	21.90	0.00	22.60	4.70	0.10
1993	326.91	4.60	90.74	53.90	87.75	22.39	2.33	31.80	2.12	0.15
1994	60.83	101.10	81.33	40.77	54.97	12.76	0.00	25.69	12.71	0.00
1995	15.54	187.88	64.44	42.54	56.72	35.99	10.58	23.21	1.36	0.00
1996	14.04	139.80	86.81	61.00	57.44	20.97	1.20	15.73	0.67	0.00
1997	27.25	186.32	76.10	51.33	38.74	16.96	2.33	32.83	0.99	0.04
1998	256.49	70.67	80.95	59.44	33.91	14.75	3.38	59.37	1.07	2.84
1999	105.63	99.50	82.59	53.68	37.76	14.54	3.86	13.87	1.13	26.22
2000	127.99	307.74	70.77	51.25	14.28	18.88	2.67	11.93	4.51	0.00

Source: Ministry of Finance (MoF) Economic Surveys of different years

2.3.3.2 Import of Food Items and Raw Materials

In spite of having an agrarian economy Nepal still imports large quantity of food products to meet her consumption needs and provide raw materials to her industries (**Table 2.10**). The importation of food items from other countries and particularly from India has helped reduce the price of such products within the country and the Nepali farmers are not getting real price for their products. This has brought competitive atmosphere within the country. In this context it is imperative to enhance the competitive strengths of the Nepali products.

Table 2.10: Import of Major Agricultural Commodities (NRs. in million)

Year	Tobacco	Milk Products	Vegetables	Sugar	Rice	Live Animals	Fruits	Pulses	Tea
1992	248.10	182.00	134.60	244.00	241.10	534.40	88.90	0.00	70.50
1993	293.07	159.81	137.49	177.97	241.87	408.53	67.18	80.16	42.30
1994	169.06	134.92	166.57	462.04	210.83	231.16	79.01	0.00	51.77
1995	214.74	140.99	160.97	85.12	195.98	177.26	64.30	63.03	29.95
1996	190.85	188.85	150.42	99.02	221.77	147.31	103.38	52.87	21.59
1997	191.13	173.62	152.21	175.41	138.31	110.62	61.44	54.65	31.70
1998	233.88	154.53	154.25	95.38	59.83	105.62	58.12	64.56	21.40
1999	215.99	172.79	129.62	125.27	666.88	103.01	48.02	82.31	27.07
2000	195.21	149.48	174.99	3.90	881.37	95.68	56.87	83.18	24.06

Source: Ministry of Finance (MoF) Economic Surveys of different years

2.3.3.3 Insufficient Infrastructure

Poor access to basic services and infrastructure poses serious limitations to improved competitiveness. The difference in access to electricity services between urban and rural

areas in Nepal is severe. Only 40% of the population have access to this utility. Inadequate all weather access road and insufficient information infrastructure are its major constraints for the development of agricultural sector.

2.3.3.4 Poorly Performing Factor Markets

When rural factor markets work well, they may play a critical role in linking economic growth to rural poverty reduction. However, in the four factor markets like - rural finance, agricultural technology, land and rural labour - effectiveness and productivity are low. In rural finance and in the land market, policy reforms and an improved regulatory environment are needed. In the rural labour market, educational level and worker productivity, and hence wages, are all notoriously low. Insufficient investment in technology generation and adaptation constrains productivity.

2.3.3.5 Output Marketing Constraints

Low levels of organization, lack of market information systems, high marketing costs, non-availability of quality packaging materials or high cost of such materials are the main constraints faced today by key economic players in agriculture marketing.

2.3.3.6 High Susceptibility to External Shocks

Nepal's agricultural sector faces significant risks arising from highly frequent shocks, often coming simultaneously in more than one form, ranging from market induced shocks to policy based natural shocks. Due to a lack of risk management capacity, the Nepali economy's high exposure to risks leads to a high degree of vulnerability, from the national level down to the household level.

2.3.3.7 Vulnerability of Nepali Exports

Nepal being a landlocked country, her trade is very much dependent on the availability of better transit routes through her neighbors. She has been using the transit route from India from ancient time; but on several occasions the transit of Nepali goods through India is not smoothly conducted. Since the size of Nepali agricultural export is limited and small in scale it is difficult to compete in the regional and international markets. Though the quality of agricultural products is very good, lack of certification agency is putting Nepali exporters in difficult position.

2.3.3.8 Exchange Rate: Pegged and Flexible

Nepal is having fixed exchange rate with the Indian currency and flexible exchange rate with other currencies. This has created an unique situation. In fact, with the fixation of exchange rate with the Indian currency; the flexible exchange rates with other currencies are generally fixed on the basis of exchange rates fixed between the other convertible currencies and Indian Rupees. Any variations in the exchange rates between Nepali Rupees and other convertible currencies and between Indian Rupees and other convertible currencies may lead to cross border transaction of convertible currencies because of the open border between the two countries. The dynamics of exchange rate of Nepali currency with Indian rupees, US $ and Euro is presented in ***Annex-1***.

2.3.4 Mainstreaming Gender Concerns in Agriculture

Women are playing major role in the agriculture activities. Women's contribution to agriculture production is 60.5% (NPC, 2002) and proportion of their contribution is continuously increasing. However, due to the lack of gender friendly policy of improvement and extension of agriculture technology, welfare of the female farmers is not improved. On an average, women work 11 hours a day, which is about 4 hours more than their male counterpart. There is no change in gender role in the society, majority of women work in rural areas and in the informal agricultural sectors with little modern technical know-how and are lowly paid. Because of the maternity role to be played by women, they have dual workload and have affected their employment in the formal sector.

In respect of land ownership, women's ownership over agricultural land is hardly 4.4%. Among them 81% women own less than 1 hectare of land. It is because the traditional outlook of the society towards women has not improved as expected. From focus group discussion it was also found that the males a have great decision making role with regards to buying and selling of agriculture inputs and produces. However, women play the major role in selecting the seeds of vegetables. Furthermore, women have limited access to institutional credit facilities. All of these indicate that there is a dire need of gender mainstreaming in the agricultural sector.

2.3.5 Role Public-Private Partnerships

Both public and private sectors could play vital role in promoting competitiveness and removing constraints for exports. Jointly, public and private sectors have key roles in promoting competitiveness and avoiding risks for exports. The public sector has a crucial role in promoting market mechanism, such as eliminating distortion signals, providing infrastructure and facilitating information (e.g. market information). The private sector, domestic and foreign, needs to take the lead in identifying opportunities, facilitating the adoption of appropriate technologies, and making financial and marketing arrangements. Support should also be provided to establish and strengthen trade organizations. Technical and managerial capacity building activities should be promoted. Various commodity-related associations could gradually take over some roles and provide necessary linkages to domestic and foreign markets. They can become a good vehicle for transmitting rewards to farmers who deliver better quality and to establish successful vertical integration partnerships. World markets bring competitive pressures to bear and make it impossible to sustain inefficient production; but they also offer vast sources of demand which, when tapped successfully, can drive increased business and economic growth, and ultimately contributing significantly to poverty reduction.

CHAPTER III: NEPAL'S ACCESSION TO WTO, SAFTA AND ITS IMPACT ON NEPALESE AGRICULTURE

World Trade Organization (WTO) became effective from January 1, 1995. To date 147 countries including Nepal have become its members and about 97% of the merchandise trade in the globe is in the hands of WTO members.

Under WTO non-tariff and other trade barriers are converted into tariff barriers and an upper bound is set for the tariff barriers. This makes the foreign companies, investors and governments confident that the non-tariff and other trade barriers will not be imposed in future and tariff barriers will not be raised above the bound set for it. Market opening commitment helps the companies and investors to estimate the market size for their products. Developing countries and LDCs get more time for adjustment and greater flexibility in rules. In addition, the LDCs get some privileges of technical assistance from developed countries.

The WTO agreements cover a wide range of areas and activities including agriculture. A number of simple, fundamental principles are applied to all of these agreements (WTO, 1998). The major agreements that have direct relations with agriculture are the Agreement on Agriculture (AoA), Agreement on Application of Sanitary and Phytosanitary Measures (SPS), Technical Barriers to Trade (TBT) and Trade Related Aspects of Intellectual Property Rights (TRIPS).

3.1 AGREEMENT ON AGRICULTURE

Non-tariff measures like import quotas and subsidies have distorted the agricultural trade for decades. Agreement on Agriculture (AoA) makes the agricultural trade predictable for importing and exporting countries.

Fourth Ministerial Conference committed special and differential treatment for developing countries to enable them to effectively take account of their development needs, including food security and rural development. The AoA applies to market access, domestic support and export subsidies.

Various trade restrictions confronting imports are removed under the market access commitments. Every member makes commitments to open certain percentage (in general 5% of the total domestic consumption) of market share to the foreign products that is called market access. Nepal's market access is already more than the level of access required. Therefore, Nepal is not asked to open quota for any product. In many original members of the WTO having high level of tariff binding, the opening of quota is requested during negotiations. Some fraction of the imports is allowed at very low custom on quota basis that is called market access quota. All non-tariff and other trade restrictions are required to be converted into tariffs (through the process called tariffication). The tariff needs to be bound and the applied tariffs will 'never' cross the bound. Revising a bound

tariff upward is a difficult task. For this purpose the member countries have first to compensate the initial negotiating right (INR[4]) holders of the commodity and later it should negotiate with all the members who like to have it.

Domestic support provides commitments to reduce agricultural subsidies and other programs including those, which raise or guarantee farm gate prices and farmers' incomes. Domestic supports are divided into different boxes resembling traffic lights. Non-trade distorting expenditures such as in research, infrastructure, environment and disaster management fall under green box and hence have no limit. All trade distorting supports fall under amber box and are subject to reductions. The size of amber box is measured in terms of aggregate measure of support (AMS). The AMS has reduction commitments for all members except the LDCs. The agreement allows governments to support their rural economies through policies that cause less distortion to trade. Developed and developing members need to reduce export subsidies and other measures that make exports artificially more competitive.

The AoA has come under review since 2000. It is rightly identified that the root cause of distortion of international trade in agriculture is the massive domestic subsidies given by industrialized countries to their agricultural sector over the decades. This has led to excessive production (as well as of import restrictions) and it's dumping in international markets (i.e., selling in foreign market at prices below the cost of production or below the price at the domestic markets). In order to minimize such dumped exports and to keep their markets open for efficient agricultural producers of the world, the starting point has to be the reduction of the domestic production subsidies given by the industrialized countries, followed by reduction of export subsidies and the volume of subsidized exports, and minimum market access opportunity for foreign agricultural producers. The remedial measure for the dumping is the imposition of anti-dumping duty (ADD) by the importing country. But, the imposition and the level of the ADD should be validated statistically and there is a burden of proving the injury to the domestic industry due to the dumping.

3.2 AGREEMENTS ON APPLICATION OF SANITARY AND PHYTOSANITARY MEASURES

The Agreement allows the members to restrict any import consignment that has risk of food safety and human, animal and plant health. All the members have rights to protect the health and life of plant, animal and human being from the risk of disease and pest that have risk of spreading and establishing in the country from the imports. For such protection, the members are encouraged to use international standards, guidelines and recommendations {FAO/WHO Codex Alimentarius Commission for food, International Office of Epizootics (OIE) for animal health and International Plant Protection Convention (IPPC) for plant health} where they exist. However, they are free to set their own standards based on science. But these should be applied only to the extent necessary to protect human, animal or plant life or health.

[4] *Nepal has committed INR for some commodities to Australia, Canada, European Union, India, Malaysia, US and Japan.*

The Agreement on application of SPS measures apply:

- to protect animal or plant life or health within the territory of the Member from risks arising from the entry, establishment or spread of pests, diseases, disease-carrying organisms or disease-causing organisms;
- to protect human or animal life or health within the territory of the Member from risks arising from additives, contaminants, toxins or disease-causing organisms in foods, beverages or feedstuffs;
- to protect human life or health within the territory of the Member from risks arising from diseases carried by animals, plants or products thereof, or from the entry, establishment or spread of pests; or
- to prevent or limit other damages within the territory of the Member from the entry, establishment or spread of pests.

SPS measures include all relevant laws, decrees, regulations, requirements and procedures including, inter alia, end product criteria; processes and production methods; testing, inspection, certification and approval procedures; quarantine treatments including relevant requirements associated with the transport of animals or plants, or with the materials necessary for their survival during transport; provisions on relevant statistical methods, sampling procedures and methods of risk assessment; and packaging and labelling requirements directly related to food safety.

Developed countries are to take into account the special needs of developing countries and LDCs, for preparation and application of SPS measures. The LDCs may delay application of the provisions of SPS agreement for a period of five years affecting importation or imported products. This relaxation is not available for imports. It means that the delayed application of SPS brings threats to plant, animal and human health and life during the transition period.

3.3 AGREEMENT ON TECHNICAL BARRIERS TO TRADE AND AGRICULTURE SECTOR

Agreement on Technical Barriers to Trade establishes disciplines on technical regulations, standards and conformity assessment procedures. Technical regulations and standards deal with product characteristics, processes and production methods related to a product, and may also bear upon terminology, symbols, packaging, marking or labelling. Conformity assessment procedures, such as testing, inspection, evaluation and approval, are employed to determine compliance with technical regulations and standards.

Technical regulations and standards are used by governments for a wide range of purposes such as the protection of life, health and safety (that relates to SPS), and the protection of the environment, consumer welfare, national security, or the prevention of deceptive practices (that relates to TBT). However, technical regulations, standards or conformity assessment procedures may also constitute TBT when such measures are discriminatory or otherwise restrictive to trade. For example, differences in the application of national regulations and standards may have the effect of discriminating

against or among foreign suppliers. Similarly, the denial to foreign suppliers of access to inspection facilities, or the imposition of additional costs and delays on imported products in testing and inspection procedures to determine conformity, may be trade-restrictive. Thus, regulating technical regulations, standards and conformity assessment procedures within the framework of the multilateral trading system reflects the delicate exercise of striking the right balance between, on the one hand, disciplining protectionist measures and, on the other, allowing the nation to protect or promote important social values or interests through the exercise of regulatory autonomy.

Members should use relevant international standards, where they exist, as a basis for their technical regulations, except when they would be an ineffective or inappropriate means for the fulfillment of the legitimate objectives pursued, for example, because of fundamental climatic or geographical factors or fundamental technological problems. Even in the cases when the international standards are ineffective or inappropriate the TBT Agreement encourages Members to give positive consideration to accepting as equivalent technical regulations of other Members, even if those regulations differ from their own, provided they are satisfied that these regulations adequately fulfill the objectives of their own regulations. Under this provision, Members retain the discretion to determine whether or not equivalence will adequately satisfy their legitimate regulatory objectives.

3.4 TRADE-RELATED ASPECTS OF INTELLECTUAL PROPERTY RIGHTS AND AGRICULTURAL SECTOR

Agreement on Trade-related Aspects of Intellectual Property Rights (TRIPS) protects and enforces the rights of inventors. Its main objectives are promoting, transferring and disseminating the technological innovations for the advantages of both producers and users. In green sector, it includes definition of specific genes and modifications of genes. The major concern in TRIPS concerning agriculture is the exploitation of plant genetic resources and claiming rights for gene spliced plants and animals (genetically modified organisms, GMO).

Patent right is directly concerned to agricultural sector. Patent is available for any inventions, whether products or process in all fields of technology provided that they are new, involve an inventive step and are capable of industrial application

New plant varieties need to be protected either by patents or by an effective sui generis system or by any combination thereof (Article 27.3b). A patent owner of seed or planting material will have exclusive rights to prevent third parties propagating, selling or importing that material. Patent owners also have the right to assign or transfer the patent by succession and conclude licensing contracts. The term "sui generis" is not defined by the agreement. The term might imply that the protection of rights to new plant variety can be done by a member's own way provided it is effective to protect the rights. Considering the level of agricultural development Nepal can not afford for patenting a new variety of plants. Therefore, Nepal should go for sui generis option. While protecting the rights of

plant breeder for their breeding effort the rights of the farmers also need to be protected to use their produce as they like.

3.5 ACCESSION PACKAGE OF NEPAL

Accession commitments are reflected in Protocol of Accession and the Working Party Report. The Working Party Report comprises of systemic commitments that are applicable to all alike and specific commitments to the acceding country. Schedule of commitments to goods and services are annexed to the working party report. The commitments relating directly to agriculture are summarized as follows:

3.5.1 Domestic Supports

The *de minimis* level for Nepal is 10%. It means that we are free to provide subsidy to the farmers up to 10% of the value of agricultural production. The subsidy excess to this is to be counted to AMS. As we are not providing subsidy more than 10% during the base period (1995 to 97) our base AMS is zero. Even if we have AMS above zero level we as a least developed country (LDC) do not have to reduce it. Therefore, we have enough room to provide subsidy and supports to the farmers.

3.5.2 Market Access

Simple average of bound tariff in agriculture at the date of accession is 51% and the final (by 2006) is 42%. Tariff levels of some major commodities are presented in **Table 3.1.** Nearly 83% of the products have tariff binding between 30 to 50%. Nepal is charging agricultural service charge of 10% of import value for agricultural products that have no customs duty. This charge falls under the category of other duty and charges (ODC). We have committed to reduce ODC to zero from 2005 to 2013 in a phased manner. As the bound tariff for most of the agricultural products are higher than the applied tariff, increasing the level of applied tariff within the bound level can generate the effects of ODC. But, in accordance with the Article IV of Nepal-India Trade Treaty, we cannot charge customs duty on the primary agricultural products imported from India. As the level of domestic support in India is much higher than that in Nepal, Nepalese farmers will find difficulty in competing with the products imported from India after removal of the agricultural development fee.

As Nepal has no excessively high tariff to obstruct minimum market access, no member asked us to open tariff rate quota, i.e., importing certain quantity of goods at very low tariff and apply normal tariff for above the quota import.

Table 3.1: Bound Tariff of Major Commodity Groups

Commodities	Tariff
Cereal and cereal products	50 –60%
Dairy products	50% (40% in some tariff lines)
Meat products	40-60 (30% in some tariff lines)
Fruits and fruit products	30 – 50%
Vegetables and their products	50% (40% in some tariff lines)

Commodities	Tariff
Tea, coffee, cardamom, ginger	40 – 50%
Alcoholic products	100%
Tobacco and products	200%

Source: www.wto.org

3.5.3 Export Subsidies

Nepal has neither reported export subsidy at base period (1995-97) nor has she committed to bind the export subsidy.

3.5.4 Quarantine Measures

The export and import of plant and plant materials such as seeds, saplings, and seedlings are subject to phytosanitary measures at the border checkpoints and at the Tribhuvan International Airport, Kathmandu in accordance with the Plant Protection Act, 1972 and Plant Protection Rules, 1975. These products are examined for the possible presence of any obnoxious or restricted pathogens, pests, and weed seeds on the basis of the items listed in the Act and Rules which are periodically updated following the recommendations of the Regional and International Plant Protection Conventions and the findings of national surveys and surveillance. Minimum standards or specifications are fixed for certain categories of agricultural products (food products—processed and unprocessed) under Food Act, 1967 and Food Rules, 1970. The export and import of such products must comply with the standards fixed. The Plant Protection Act, 1972 covers the essential legal framework to address all the requirements of enforcing phytosanitary measures for import and export of agricultural commodities. The Seed Act, 1988 required that only notified seeds can be exported or imported.

Nepal adheres to the International Plant Protection Convention (IPPC) executed and administered by FAO. Nepal is a member of the Asia Pacific Plant Protection Commission (APPPC). APPPC is a regional organization adhering to IPPC charters for harmonizing the implementation of phytosanitary measures. Through APPPC, we have to streamline and scientifically build land border quarantine procedures. We are fully committed to adopt all the sanitary measures in relation to equity, transparency, harmonization, adoption of regional conditions, risk assessment, and controlled inspection and approval procedures. We should give priority to the strengthening of the plant quarantine service in the country to make phytosanitary measures consistent with the WTO obligations.

3.5.5 Pesticide Control

The Pesticides Act, 1991 and Pesticides Rules, 1994 regulate the export and import of pesticides with a view to protect the environment and ensure sanitary measures. These Acts and Rules authorize the government to ban and/or restrict any prior informed consent (PIC) listed pesticides that are potentially hazardous to health. Nepal has banned all the PIC listed pesticides except Methyl Parathion and Monocrotophos. The importation of these products is under active review.

3.5.6 Legislation and Transition

The transitional period from the date of its accession to 2006 for implementation of the WTO Agreement on Sanitary and Phytosanitary Measures allows us to obtain and utilise technical assistance to fully implement the obligations of the Agreement. During this period, existing measures would be applied on a non-discriminatory basis, i.e., providing for national treatment and most favored nation (MFN) treatment to all imports. Measures in place already consistent with the provisions of the Agreement on Sanitary and Phytosanitary Measures can not be subject to transitions, and we should ensure that any changes made in its laws, regulations and practice during the transition period will not result in a lesser degree of consistency with the provisions of the Agreement than existed on the date of accession. Technical regulations and other measures adopted during this period will be developed in conformity with the provisions of the Agreement. If any member wants to know something more about the legislation, regulation or standards affecting trade, it can enquire to National SPS Enquiry Point in the Department of Food Technology and Quality Control. Agribusiness Promotion and Statistics Division in MOAC will act as the National Notification Authority of all of SPS measures.

3.5.7 Protection of Intellectual Property and Geographical Indications

In agricultural sector we need to develop legislation in plant variety protection and the geographical indication. The present legislation does not adequately cover the protection of plant varieties. It will be intended to protect the rights of related stakeholders in accordance with the needs of the country. While entering to the WTO we have also indicated to look at other World Intellectual Property Organization (WIPO) and intellectual property (IP) related conventions, e.g., Union for the Protection of New Varieties of Plants (UPOV) 1991 in terms of national interest and explore the possibility of joining them in the future, as appropriate. But, analyses have shown that joining such organizations is not in the interest of Nepal. Similarly, the present legislation in Nepal do not cover the rights on geographical indications. The protection of geographical indications will be included in any other legislation.

3.6 BILATERAL TRADE

Nepal has bilateral trade agreements with 17 countries. Among them the agreement with India is the most important for Nepal. Nepal has treaties of transit and trade with that context. These treaties are signed with the aim of promoting trade, facilitating transit and controlling unauthorized trade. They accord each other unconditional most-favored-nation treatment. Article IV of the Treaty on Trade exempts imports of certain primary products from duties or any form of quantitative restrictions on a reciprocal basis. The treaty of trade also provides that India grants especially favorable (preferential) treatment to industrial products manufactured in Nepal on the basis of non-reciprocity in order to promote the industrial development of Nepal.

The provisions of Nepal's Transit Treaty with India and Transit Agreement with Bangladesh are consistent with the provisions of the GATT Article V which give all member countries the freedom of transit through the territory of other member country.

The provision allows the right of access to the territories of other member countries via the routes most convenient for transit

3.7 SAPTA AND SAFTA

Nepal is a member of the SAPTA since 1993 (that entered into force in 1995). So far, four rounds of SAPTA trade negotiations have been completed and each round contributed to increased product coverage and deepening of tariff concessions among the members. Nepal has granted 10 to 15% concessions on tariffs on approximately 500 products under SAPTA agreement. SAARC has decided to move from SAPTA to SAFTA by 2006.

Whether it is the WTO multilateral agreement or regional agreements like SAPTA/SAFTA, BIMSTEC, the member countries are bound to reduce and eliminate tariffs on time especially on most of the agricultural products. This will ultimately result in the erosion in margin of preference that Nepal currently possesses in market access in India. The reciprocity based preferential market access without any customs duty and quantitative restrictions for agricultural products, and same facility for Nepali manufactured products granted unilaterally by India will gradually lose their weight in favor of the MFN treatment. Regional trade agreements could also be a major factor in the future influencing the level of applied tariff rates and hence level of protection to the farmers.

3.8 IMPLEMENTATION OF WTO MEMBERSHIP TO AGRICULTURE

The WTO is a mixed blessing for a country like Nepal. Reductions in the subsidies on agriculture in the developed and developing counties is expected to increase the international prices of food items. In fact the increase in food prices will encourage the private investment in agricultural sector increasing its productivity. But this transformation of subsistence agriculture to commercial ones takes some time in Nepal where a transition is not so smooth.

Nepal is concerned with the food security and safeguarding rural employment. We are also questioning the extremely high subsidies and tariff walls even now being maintained by the developed countries, although they are committed to reduction of the both. We are seeking better market access for our agricultural products for integration to multilateral trading system.

Because of the large dependency on agriculture for employment, even minor changes in agricultural employment opportunities, commodity prices or trade conditions, can have major socio-economic ramifications in Nepal. To comply with the principles of WTO without compromising our development needs and livelihood of the farmers we need some additional facilities like:

- Maximum improvements of opportunities and terms of access (like duty free and quota free access to the markets in developed countries) for agricultural products of our production potential. The major products of export interest of Nepal with high growth potential in international trade include dairy products, poultry products, fruits,

vegetables and spices (ginger, cardamom), tea, coffee, honey and silk - all in primary as well as processed forms;

- Policy changes particularly those concerning domestic support including the introduction of policy measures aimed at addressing supply side constraints and achieving food security, rural development and alleviation of poverty;
- Meaningful and practical special and differential treatment to LDCs to enable them to take appropriate domestic policy measures to address growth and development needs in agriculture; and
- In the meantime, it is absolutely necessary to protect the resource poor subsistence farmers from surges of cheap subsidized imports.

Human resources development, infrastructure development and legislative framework are the needs of the day. We also need to change our production pattern for export orientation and capacity building of the export traders.

Nepali farmers being small in nature (with small land holding and limited numbers of livestock and poultry birds) they may face difficulty in competing in the international market. Therefore, we need to protect major commodities like food grains, fruits, vegetables, meat and milk and their processed products for protecting the interest of our farmers.

As a member of WTO, we need to notify periodically about our changes in trade-related policies, laws and data. If any member feels that the decisions of other members hampered their trade interest, it can call for consultation and take the case to the Dispute Settlement Body of WTO. We need to prepare for that. Our existing capacity may not be sufficient to fulfil the needs efficiently.

We need to protect our indigenous knowledge, practice and skills along with genetic resources. We can protect the farmers and the breeders through the development of sui generis system instead of patenting that favours breeders at the cost of farmers. We need to reform our policy measures, legal structures, technical standards, safeguard measures as early as possible. Harmonizing standards with major international standards and establishing equivalence with trading partners will facilitate the SPS and TBT provisions acting as trade barriers.

We need to improve our quarantine control system to ward off the disease and pests. Improvement in pest and disease control, early warning systems and pest and disease eradication are essential. We need to establish agro-industrial policy, input subsidy policy (for low-income or resource poor producers), credit subsidy policy (for low-income or resource poor producers) and transportation subsidy policy for agricultural products.

Export and import inspection services are necessary for health, safety, grading or standardization purposes. Marketing and promotion services like market information, advice and promotion are needed. Legal provisions and technical tools need to be developed for analyzing the provisions and effects of contingency measures like anti-dumping, countervailing, safeguards and balance of payments. Though the development

of such subsidies structures, legal provisions, service delivery and technical capacity is costly at the short run, it will pay high in the long run.

3.9 IMPACTS OF NEPAL'S ACCESSION TO THE WTO IN AGRICULTURE

Accession to the WTO can have several impacts on agricultural sector. Detailed analysis of the probable impacts is not possible within the scope of this report. This section attempts to hint at some major impacts that Nepali agricultural sector may have to cope with.

Several preparations we have to make. First, we have to make our legislative provisions and policy matters compatible to the WTO framework. Secondly, we have to make bilateral trade treaties compatible with the WTO provisions. Both Nepal and India have agreed to review and revise the relevant provisions in the bilateral Trade and Transit Treaties in case certain difficulties arise to either country from WTO obligations, including a complain by a third country seeking a similar preferential treatment after Nepal's accession.

Thirdly, there are several rebates and concessions on duties. Goods produced in and imported from India are granted a rebate in the chargeable ad valorem rate of customs duty by 20% up to the tariff of 40%, and by 10% rebate on tariffs above 40%. In practice, since the MFN rates on agricultural products hardly exceed 40% the applicable rebate in most cases is 20%. The system of rebates and concessions given to the products from India are said to take account for smuggling due to the porous border.

On goods imported from Tibet an Autonomous Region of the People's Republic of China, and goods produced in and shipped from SAARC countries other than India, the applicable rebate is 10% on the chargeable customs duty. In addition, a 5% rebate is granted to goods produced in and imported from countries enjoying MFN treatment provided that LC is opened in and the invoices and other documents are prepared in the MFN country from where the shipment of goods is made. But, there is a risk of questions being raised by other member countries on such rebates.

Fourthly, because of the large dependency on agriculture for employment, even minor changes in agricultural employment opportunities, commodity prices or trade conditions, can have major socio-economic ramifications. To comply with the principles of WTO without compromising our development needs and livelihood of the farmers we have some additional facilities like a lower level of reduction commitments than that of the other acceding member countries, longer implementation period for any reduction commitments (2 to 10 years for ODC[5]) and flexibility in terms of rules. Now there is need to work for the (a) maximum improvements of opportunities and terms of access for agricultural products of our production potential; (b) the major products of export interest to Nepal with high growth potential in international trade include dairy products, poultry products, fruits, vegetables and spices (ginger, cardamom), tea, coffee, honey and silk - all in primary as well as processed forms; (c) policy changes particularly those concerning domestic

support including the introduction of policy measures aimed at addressing supply side constraints and achieving food security, rural development and alleviation of poverty; and (d) it is absolutely necessary to protect the resource poor subsistence farmers from surges of cheap subsidized imports.

Our major problem in international competition is small scale and high cost of production. Low technology production makes our product less competitive. In addition, our trading partners may prevent entry of our products on scientific grounds for preventing animal, plant and human health and life in their country. We have competitiveness in the products with low level of technology and high labour inputs. Some of such products are hybrid vegetable seeds, flower seeds, medicinal herbs, silk, honey, dry fruits and cheese.

The WTO provisions for trade in services will increase the mobility of agricultural technicians. Nepal has opened the veterinary services with incorporation to Nepali firms with at most 51% of foreign equity capital. This will expedite the transfer of veterinary technology from developed countries to Nepal. The TRIPS measure is expected to accelerate the pace of generation of technology. The royalty rights of the inventors will make the technology, however, costlier to the users. Since the users of the technology can make better choice of technology for adoption it will increase the net gains of the farmers.

3.10 MAJOR 10 IMPACTS ON AGRICULTURE

1. Focus on trade facilitation

WTO does not focus on addressing the development needs and concerns of the small-scale subsistence farmers in developing countries. The Agreement tends to emphasize on commercial agriculture. Therefore, there is a need to increase domestic support to resource poor farmers (to be specified by our policy).

2. Exposures of producers

Agricultural trade became more protected in the developed countries after the WTO, In Nepal the it is left to compete in the open market without necessary hardening and acclimatization of farmers. Therefore, the small farmers are vulnerable to external forces (cheap and subsidized imports). Legislation and capacity for safeguards are needed (counter veiling duty, anti-dumping duty, and balance of payment provisions)

3. Cost of technology

TRIPS permit patenting of process and products that are developed by following inventive steps and have the potential of commercial exploitation. Under that we have to protect the rights of the breeders. This will increase the cost of seed. There is need to provide technological support to the farmers.

4. Supply side constraints

Our agriculture has a small scale of production, high cost of collection and heterogeneity of the produce. This can hinder our exports. Therefore, promotion of buy-back system from forward linkages is needed.

[5] *ODC = Other duties and charges.*

5. Product standards

International standards for agriculture are (a) for food: Codex Alimentarius Commission of FAO/WHO, (b) for animal health: International Office of Epizootics and (c) for plant health: International Plant Protection Convention (IPPC). Individual members can set higher standards based on scientific evidences. SPS/TBT have created an indirect challenge to our products. Therefore, quality control and food safety need to be strengthened

6. Market access to 146 members

We need not negotiate with each country for the export. Market accesses negotiated by others are also available to us (MFN Treatment). Other members can not discriminate us. In order to reap benefits from such provisions exploration of export markets and information support to exporters needed.

7. Provisions of technical assistance

Advanced countries need to provide TA to LDCs, though thus they have no legal bindings as such. If any advanced country rejects our export on the ground of quality standard or any other conditions, we can request the country concerned for TA to improve it. Integrated framework of WTO has provisions for TA to LDCs. We should speed up the search for TA

8. Input supply situation improves

Non-tariff trade barriers will not be applicable in trade. Transparency in trade rules will facilitate the imports of inputs required in agriculture. We need to bring down tariff on agricultural inputs and machineries to reduce the cost of production.

9. Cost of infrastructure will decrease

Infrastructural and professional services are opened to foreign investment. It will increase the competition and costs upon these will decrease. We need to strengthen entrepreneurship skills for best utilization of emerging opportunities of incorporation to foreign direct investment.

10. Agriculture will get commercialized

Better input supply, increased export market and competition in domestic as well as foreign markets will lead to commercialization of agriculture. Labor intensive products having international competitive edge need to be focused on.

Therefore, the impacts of accession to the WTO on agriculture are mixed. Whether we get benefited or not depends on how we respond to the challenges and opportunities emerging therefrom.

CHAPTER IV: TOTAL FACTOR PRODUCTIVITY OF THE AGRICULTURAL SECTOR

4.1 SOURCES OF ECONOMIC GROWTH

The standard model of economic growth seeks to explain the long-term trend in the potential output of an economy by breaking it down into two parts: (a) the dimension which can be explained by the growth in inputs used in production, and (b) the dimension which can be explained by improvements in the efficiency for which these inputs are used. The latter is called total factor productivity (TFP) growth.

Generally we think of productivity as measuring the current state of technology used in producing the goods and services of an economy or industry based on agriculture and we interpret the changes in TFP as reflecting 'technological and efficiency changes', shifting up the production possibilities frontiers. The TFP is essentially the economy's ability to produce output from a given stock of inputs. TFP of an economy only increases if the work efficiency increases to obtain more outputs from a given supply of inputs.

The TFP is the best expression of the efficiency of economic production and the prospects for longer-term increases in outputs. The TFP measures the outputs produced by the given amounts of labour and capital together. High TFP indicates a high level of technology and means that both capital and labour can earn large rates of return while cost of production remains low.

One of the stylized facts that have emerged from the accumulation of empirical work on TFP growth at the economy-wide level has been that roughly one-third to one-half of output growth can be attributed to TFP change. TFP growth is often described as the rate of "technological progress", but it is well understood that this has to be interpreted broadly to include changes in health and education levels, allocation and efficiency, and factors affecting the motivation of workers.

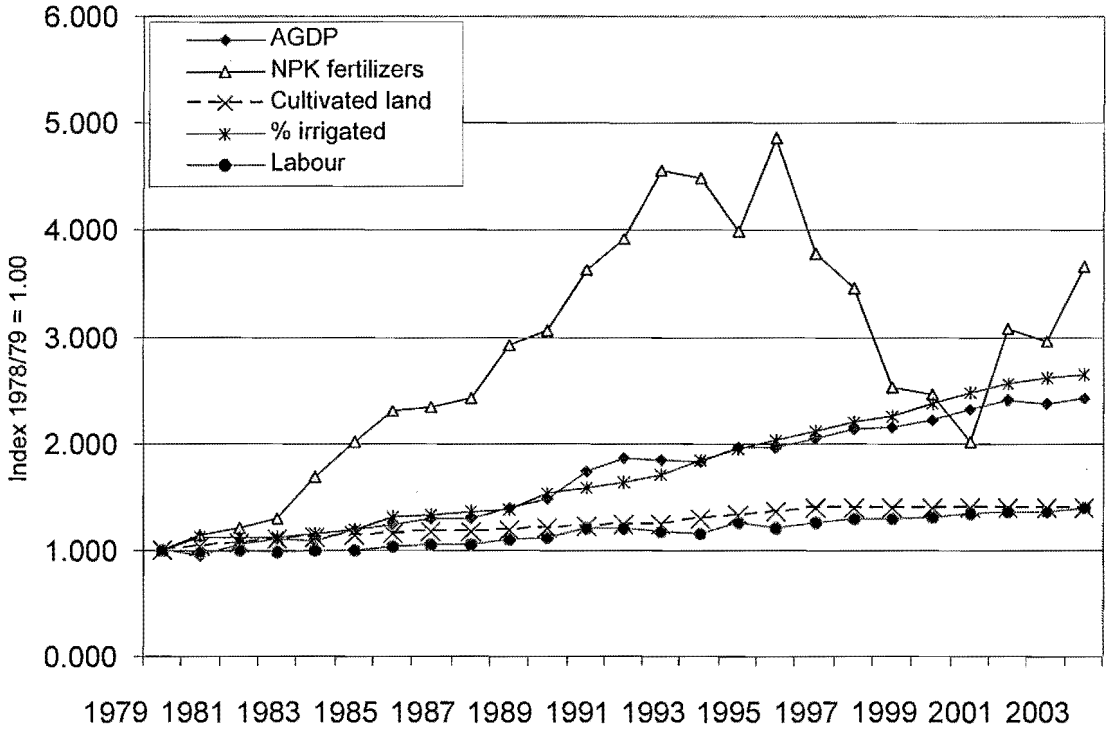
4.2 INPUT USE PATTERNS IN NEPALI AGRICULTURE

Input use patterns in agriculture over 25 years are portrayed in **Fig. 4.1**. The steadiest growth is observed in irrigation. Growth in fertilizer use was very good before liberalization. But, after liberalization the supply of fertilizer decreased continuously mainly due to limitation in the budget for providing fertilizer subsidy (**Table 5.17**). After deregulation of fertilizer trade (in 1998) and removing the price subsidy from the fertilizers, the supply has increased with some fluctuations (**Fig. 4.1**). The fluctuation can be contributed to the fluctuation of international price of the fertilizers.

Slight increase is observed in the cultivated land particularly, before liberalization. The least growing factor of production is labour. Continuously expanding secondary and tertiary sectors of economy have been absorbing extra labour of the agricultural sector

continuously. Out migration of the labour force is also one of the sources of employment. The agricultural gross domestic product (AGDP) is increasing over the years with some minor cycles in it.

Fig. 4.1: Indices of Major Factors of Production and AGDP



Data source: Ministry of Finance (different years) Economic Survey

4.3 TOTAL FACTOR PRODUCTIVITY

Over the long run the indices of TFP do, in fact, reveal the increased productivity associated with technological possibilities, either in the form of technical progress or through a better use of all available technologies. On the basis of present analysis it is observed that the growth in AGDP was over 5% before the liberalization. After it the AGDP has plummeted to less than 3% (**Table 4.1**). This growth before liberalization was due to increased use of factors of production (capital and labour) and increase in TFP. The capital grew faster before liberalization than after it. The population growth rate remained over two percent, the growth of labour in agriculture sector is less than one percent per annum throughout. This is good for the economy as the disguised labour is diverted to other sectors. But, improved technology and increased efficiency should have accompanied this and mechanization of the sector was essential so that per labour earning also would have accordingly increased in the agricultural sector. For this the TFP in agriculture should record an increase. The growth in TFP was higher before liberalization than after. However, the percentage share of TFP in AGDP has increased from 46% before liberalization to nearly 56% after liberalization. This is because the factors of production were growing slower after liberalization than before liberalization. On an aggregate, about 49% of the growth in AGDP is due to TFP and the rest is due to

factor inputs. A narrow focus on technology without due consideration of market opportunities and institutional mechanism to generate and disseminate technology leads to ineffective use of scarce resources and marginal improvement in productivity.

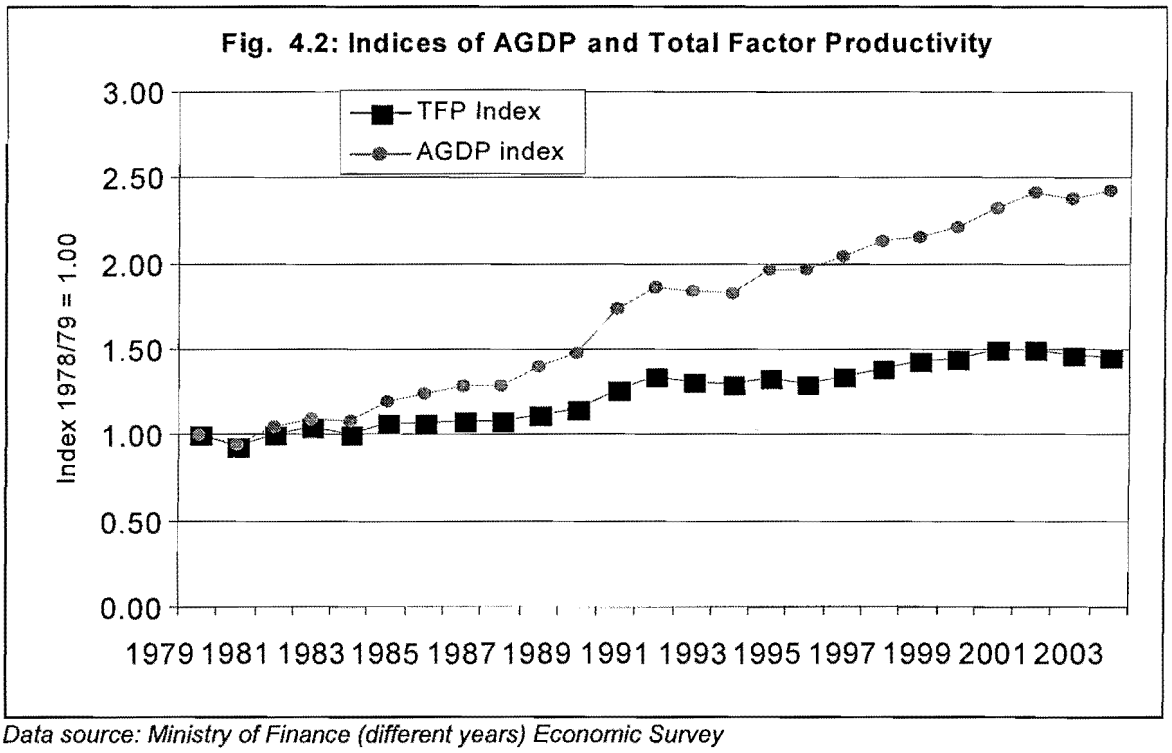
These calculations have clear limitations, given the nature of the data on which they are based. The first limitation is that we only compute rates of changes in RFP. The second and the most important limitation is that we do not make adjustments for input quality changes.

Table 4.1: Growth Rates of Output, Capital, Labour & TFP Before and After Liberalization

Period	AGDP	Capital	Labour	TFP	% Share of TFP on AGDP growth
Before Liberalization (1979/93)	5.10	1.91	0.82	2.35	46.08
After Liberalization (1994/03)	2.62	0.42	0.74	1.46	55.71
Overall (1979/03)	3.97	1.35	0.83	1.94	48.76

The growth in AGDP and the TFP are presented in **Fig. 4.2.** The growth in AGDP is clearly higher than that of TFP. The gap between the AGDP and TFP is due to the growth in factors of production, whereas, the gap between the base period (grid line1.00) to the TFP curve is the increase in TFP. It is clearly visible that the former gap is bigger than the latter. It means that the TFP is not increasing as it is expected. The AGDP is pushed up more by the factors and less by the efficiency on the use of those factors.

Fig. 4.2: Indices of AGDP and Total Factor Productivity



Data source: Ministry of Finance (different years) Economic Survey

Table 4.2 International comparison of output and TFP Index growth rates in agriculture

(1981 to 2001)

Country	Output Growth Rates %	TFP Growth Rates %	% Share of TFP on Output Growth
Bangladesh	2.37	1.30	54.85
India	3.00	2.41	80.33
Nepal	3.26	2.10	64.42
Pakistan	4.47	2.54	56.82
Sri Lanka	0.89	-0.92	
China	5.20	4.76	91.54
Afghanistan	2.15	-0.05	
Indonesia	2.92	-0.39	
Vietnam	4.84	3.26	67.36
Thailand	2.20	1.08	49.09
Mongolia	-0.13	-0.54	

Source: Avila and Evenson

The growth rates of TFP during 1981 to 2001 are negative in Sri Lanka, Afghanistan, Indonesia and Mongolia **(Table 4.2).** The countries having negative growth rates in TFP have lower output growth rates. In Mongolia the output growth rate is negative for the period. Among the countries presented, the highest TFP and output growth rates are found in the Peoples Republic of China followed by Vietnam. The correlation between the TFP growth rates and output growth rates among the countries presented is found to be very high (i.e., 0.87).

The highest contribution of TFP to output growth is found in PR China (91.54 %) followed by India (80.33 %). The contribution of TFP in Nepal is higher (64.42%)[6] than that in Pakistan (56.82%), Bangladesh (54.85 %) and Thailand (49.09).

Increase in the factors of production increases the costs of production. This slow increase in the TFP is increasing the cost of production per unit making Nepali agricultural products less competitive to the international market. Therefore, the government should simplify its extension and development administration to increase the efficiency of agricultural sector.

[6] Some discrepancies in the growth figure for Nepal are found in the present study and those reported by Avila and Evenson. There are two sources of discrepancy. First, the growth rates estimated in this study is for the period of 1979 to 2003 whereas that reported by Avila and Evenson is for 1981 to 2001. Secondly, the sources of data used in the study are Ministry of Finance and Ministry of Agriculture and Cooperatives whereas those used by the Avila and Evenson are from FAO.

CHAPTER V: REAL EXCHANGE RATE AND ELASTICITIES OF EXPORTS AND IMPORTS

5.1 REAL EXCHANGE RATE WITH INDIAN CURRENCY

There are two major concepts of the exchange rate, namely the nominal and the real rates. The nominal rate is an undeflated conversion factor between one currency and another. It corresponds to the exchange rate a government can announce or fix. The nominal equilibrium rate is the rate at which the demand and supply of foreign exchange (to finance both current accounts and capital accounts transactions) are equal for a given set of trade taxes. The purchasing power parity (PPP) relates to the purchasing power of one currency to that of another, by adjusting the nominal rate for relative inflation.

Neither the PPP nor the nominal equilibrium rate (NER) necessarily implies an optimum exchange rate; nor do they correspond to the shadow price of foreign exchange used in social project evaluation. The PPP is considered to be misaligned when its value differs from the base period value. The concept of effective exchange rate, a commodity-specific rate that expresses the price of foreign exchange including all import or export taxes, is useful in analyzing individual activities.

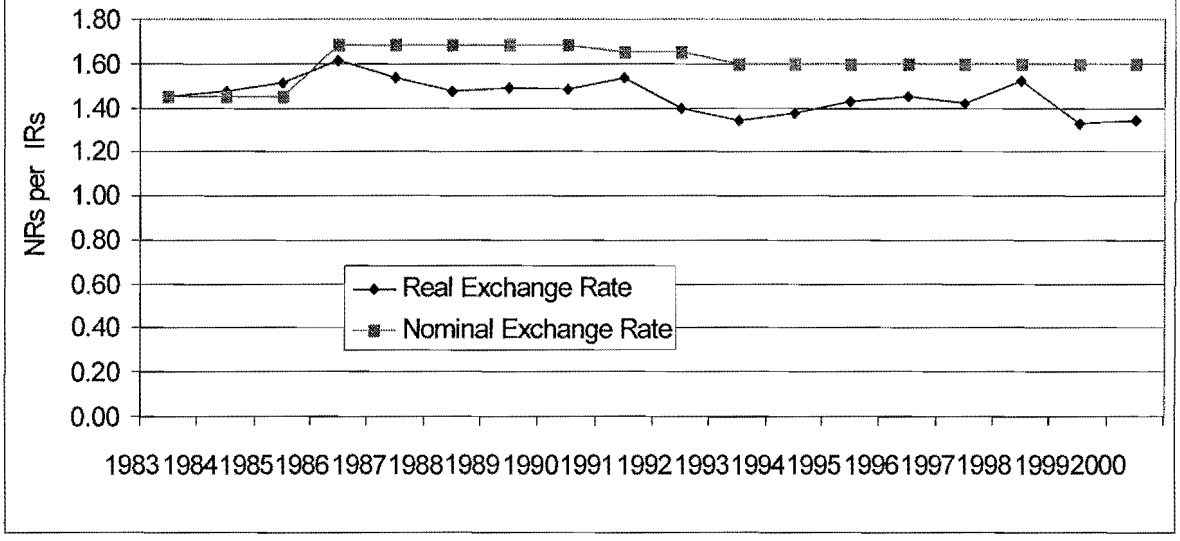
In contrast, the real exchange rate (RER) is a relative price that reflects the competitiveness of the tradable sector (import substitutes and exportable). The RER varies according to the definition used (e.g., with respect to the deflator). Following Salter (1959), Swan (1960), Dornbusch (1974), and others, the RER introduces the concept of a home goods (or non-tradable) sector. A key factor that distinguishes between tradables and non-tradables is based on their price-formation mechanism. For a classical closed economy both prices and quantities transacted of home goods are determined by domestic supply and demand. In contrast, for small open economies like that of Nepal, the domestic prices of tradables are determined by world markets together with the nominal exchange rate, trade taxes and subsidies.

The various definitions of the RER that are used in agricultural economics have resulted in some confusion. One version is the purchasing power parity index method mentioned above. Most of the early studies that attempted to measure the impact of the RER on agricultural incentives used the PPP approach (for example, Valdes, 1973; Biswanger and Scandizzo, 1983, and more recently Byerlee and Sain, 1986). There are at least three problems with the PPP concept of the RER. The first is the possibility that the base period RER may be misaligned as a result of macroeconomic disequilibrium. Secondly, even if the RER is in equilibrium in the base period, there is no reason to assume that this equilibrium will remain unchanged over time, owing to such factors as changes in the terms of trade and international interest rates. Thirdly, the base period PPP is obtained under given trade policy distortions, while we are interested in the equilibrium RER that would prevail in the absence of trade policy distortions. This requires a model of RER determination not found in the PPP adjustment.

Our major trading partner is India. Out of the 38 agricultural products exported during 2002/03, 19 major products are exported solely to India and rests of the products are partly exported. Substance portion of the Nepalese exports of agriculture commodities goes to India. Therefore, it is interesting to analyze the RER with Indian currency.

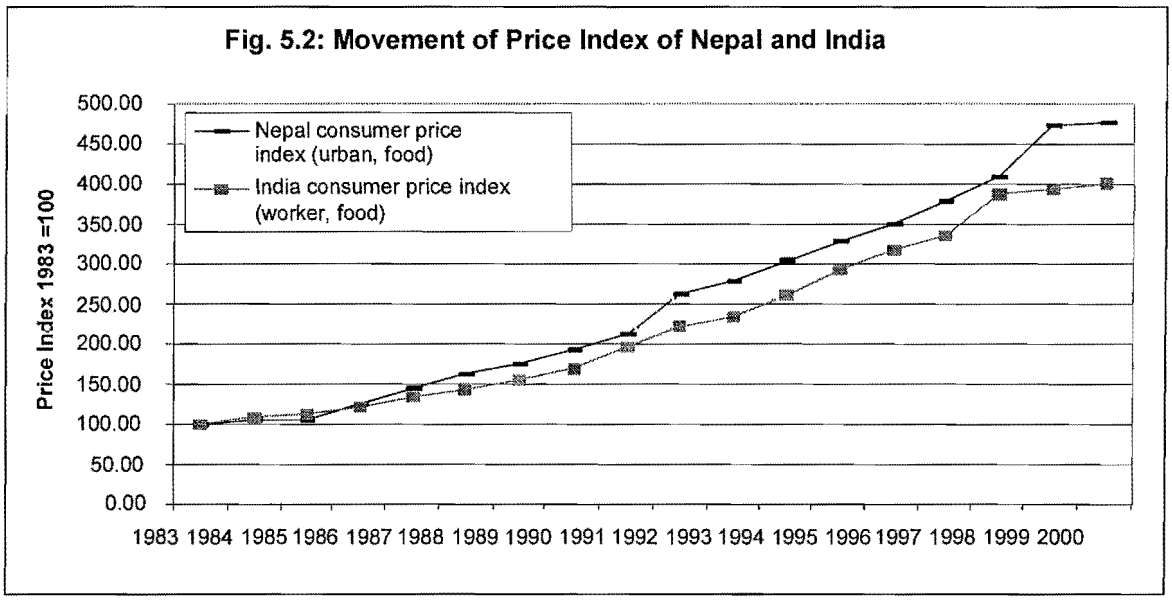
Empirically, RER of Nepali currency vis-a-vis the Indian currency is calculated by multiplying the NER (NRs per Indian rupee) by the ratio of consumer food price index of industrial workers in India to the urban consumer food price index of Nepal, 1983 as a common base. The RER and the corresponding NER are presented in ***Annex-2*** and the same is presented graphically in **Fig. 5.1**.

Fig. 5.1: Real Exchange Rate of Nepalese Currency with Indian Currency



The RER of Nepali currency is found to be lower than the NER and it is decreasing over the years. This is because the wholesale price index of Nepal is increasing faster than that of India (**Fig. 5.2**).

Fig. 5.2: Movement of Price Index of Nepal and India



The exchange rate is not approximating the path of relative changes in the price indices that lead to a misalignment of the RER. A decrease in the RER indicates over valuation of Nepali currency with respect the Indian currency. A point of caution in this connection is that this analysis implicitly assumes that the RER was equal to the NER at the base period, i.e. 1983.

A decrease in the RER leads to the decrease in the competitiveness of Nepali products as compared to those of India. Increase in the RER can be brought about by policy-induced effects like controlling the inflation or realignment of NER for improving the competitiveness of Nepali products in international market.

5.2 ELASTICITIES OF EXPORT AND IMPORT WITH RESPECT TO RER

The RER elasticities of exports of major agricultural commodities were estimated using exponential equation and the summary of the results is presented in **Table 5.1**. Exports of all major agricultural commodities, with the exception of animal ghee, are found to be inelastic to the changes in RER. It can be concluded from the results that export of agricultural commodities is affected more by the non-price factors than price factors. This is because the most of the products are perishable and should be disposed off whatsoever is the price it fetches. Even if some of the products are storable, the farmers have low retaining ability due to saving and low social security. Moreover, exporters of agricultural products find very limited alternative markets in the third world for the volume and form of the products they want to export.

Table 5.1: RER Elasticities of Export to India of Major Agricultural Commodities

S. No.	Commodity	RER Elasticity of Export	Significant[7]
1.	Jute	-7.54	0.507
2.	Pulses	6.45	0.588
3.	Cardamom	-0.37	0.796
4.	Ginger	0.77	0.684
5.	Dry ginger	0.58	0.834
6.	Rice bran oil	0.58	0.908
7.	Live animals	4.69	0.441
8.	Vegetables	14.15	0.697
9.	**Animal ghee**	**6.95**	**0.076***
10.	Fruits	-10.46	0.190
11.	Rice	-1.02	0.976

** Significant at 10% level of significance.*

Export of animal ghee (milk fat) is elastic to the changes in RER. The result shows that, on an average, one percent increase in the RER increases the ghee export by 6.95%. But, supply of animal ghee is limited by its production that is in turn a function of milk production. Therefore, considering the natural process of animal ghee production such drastic increase in supply is not possible in the short run. Nevertheless, an increase in

[7] *The significant 0.10 or less indicates that the test is significant at 10% level of significant. In social sciences, 10% level of significance is generally accepted.*

RER increases the competitiveness of the domestic products in the export market that can work as an engine to increase the domestic production.

Table 5.2: RER Elasticities of Import from India of Major Agricultural Commodities

S. No.	Commodity	RER Elasticity of Import	Significant
1.	Tobacco	-0.28	0.847
2.	Milk products	0.22	0.833
3.	Vegetables	0.46	0.601
4.	Sugar	4.26	0.718
5.	**Rice**	**-15.13**	**0.004***
6.	Live animals	-3.29	0.551
7.	Fruits	1.29	0.538
8.	Pulses	15.37	0.723
9.	Tea	-3.54	0.313

** Significant at 5% level of significance.*

Similarly, elasticities of imports of major agricultural commodities with respect to RER were estimated using similar equation and the summary of the results is presented in **Table 5.2**. Imports of all major agricultural commodities, with the exception of rice, are found to be inelastic to the changes in RER. It is because, most of the imports of agricultural products are basic needs and we have very limited alternatives to Indian source as it is connected by the land borders.

However, import of rice from India is elastic with the RER of the two currencies. It is estimated that one percent increase in the RER of Nepali currency with that of India, on an average, there is 15.13% decrease in the import of rice. But the import in addition, is also limited by the size of domestic market for that product. In general, it can be concluded that rice is a sensitive product and the rice farmers are particularly vulnerable to the imports that increase along with the decrease of the RER.

To conclude, in general, probable misalignment of fixed NER of Nepali currency with the Indian currency (from RER) does not have much effects on the export and domestic competitiveness in agricultural products except for a few commodities. But, in future, when the agricultural commodities get merchandised (with the effects of WTO accession and policy of the government for commercialization of agriculture) more agricultural products are expected to be elastic to RER. Therefore, a decrease in RER will decrease our competitiveness in the domestic as well as export markets.

CHAPTER VI: COMPETITIVENESS OF AGRICULTURAL SECTOR

6.1 NEED FOR PROMOTING COMPETITIVENESS

There is compelling evidence to show that openness to trade is associated with economic growth. Countries that chose openness in the last decades experienced higher rates of growth compared with relatively closed economies. In fact, trade has driven much global economic growth for the past thirty years and has proven to be a powerful strategy for developing countries. For agriculture, the period has seen tenfold increase in global exports.

Dynamism in international agricultural trade has come mainly from a growing market for non-traditional products. In traditional products, most developing countries face an environment of significant protectionism by developed countries.

Organization for Economic Cooperation and Development (OECD) subsidies pay about $350 billion a year on agriculture subsidies, or some $309 per acre. The recent farm bill approved by the US Congress is about $180 billion per year or about $49 per acre. In this global environment, small open economies such as Nepal's must proactively seek access to foreign markets for their agricultural products by increasing their share of non-traditional products. This poses a set of new challenges and opportunities for both the private and public sectors. A new competitiveness agenda in Nepal, including production pocket development and development of economic zone could be of great potential. Thus, a right policy mix can become the key to promoting increased level of competitiveness that Nepal requires to enter those markets.

There are four areas in which action is needed to improve the competitiveness of Nepal's agricultural sector:

- Supporting modernization of agribusiness
- Promoting agricultural exports
- Improving the effectiveness in service delivery
- Strengthening public-private partnership

6.1.1 Poverty Reduction and Broad-Based Growth in Agriculture

Gross National Product at current market price is estimated to reach NRs.486.92 billion in FY 2002/03 from NRs.439.71 billion in FY 2001/02. In the last decade various efforts had been made to accelerate economic growth. However, the recent development efforts were not enough to make significant progress in reducing poverty. According to Nepal Living Standards Surveys (NLSS) carried out in 1996, 42% of the total population still remained below the absolute poverty line. Among them, about 17.1% is counted as ultra poor or the poorest. The Ninth Plan had set poverty alleviation as its main objective with a determination of bringing down the number of those below poverty line from 42% to 32%. However, this goal could not be achieved. According to the Economic Survey, 2003 the estimated figure of poverty by the end of the Ninth Fifth year is 38%. Apart from the high incidence of poverty situation, Nepal is characterized by wide variations among urban and

rural areas, ecological belts, development regions, gender and ethnic and caste groups. According to NLSS, 1996 over 90% of the poor live in rural areas and the poverty is much more higher in the mountain areas (56%) than in the plains.

For enhancing the competitive strength of agriculture and broad based agricultural growth the primary emphasis has been given to the non-traditional and value added commercial agriculture and on ways to boost exports as the potential engine for future agricultural growth (World Bank, 2002a). The emphasis on exports is recommended because only the vast demand of external markets can fuel the sustained production growth needed for meaningful poverty reduction. Domestic demand does not have the same potential to fuel sustained growth, because Nepal's domestic market is small and characterized by widespread poverty. However, in world markets, traditional agricultural products are highly protected by the developed and developing countries. For this reason, a focus on non-traditional crops is recommended for under developed and developing countries like Nepal. To the countries like India, Bangladesh and Pakistan Nepal can export even traditional crops.

6.2 PRESENT STATUS OF AGRICULTURAL PRODUCTION

Field survey was carried out to assess the present status of production of agricultural commodities. Following are some of the findings;

6.2.1 Land Holding

Information given in **Table 6.1** shows that the average land-holding of the sample household has been found 0.95 ha, which is almost the same as the national average of 0.94 ha. The average operated land-holding of Kailali district has been highest (1.34 ha) followed by Chitwan district (1.22 ha). Palpa district has the lowest operated land holding (0.24 ha) among the sampled districts. About 73% of the total operated land of the sample farmers is irrigated.

Table 6.1: Area of Land Holding of the Sampled Households (in ha)

District	Total
Jhapa	1.00
Ilam	0.84
Chitwan	1.22
Kavre	0.66
Palpa	0.24
Kailali	1.34
Dadeldhura	0.69
Total	**0.95**

Source: Field Study, 2004

6.2.2 Input Use

Agriculture Input Corporation (AIC), "Sajha" and private suppliers are found to be the major sources of agriculture inputs in the selected districts. Figures presented in **Table 6.2** show that the private sector is the major supplier of agriculture inputs and it supplies

about 80% of the inputs. AIC and 'Sajha' stand in second and third rank for supplying agriculture inputs to the farmers of the sampled districts. This indicates that the liberalization policy of the government has helped in raising the share of private sector in the distribution system of agricultural inputs.

Table 6.2: Source of Agriculture Input (percent)

District	AIC	Sajha	Private Sector	Other
Jhapa	0.0	16.7	83.3	0.0
Ilam	8.2	12.2	79.6	0.0
Chitwan	15.3	16.9	67.8	0.0
Kavre	13.5	2.7	83.8	0.0
Palpa	6.3	3.1	87.5	3.1
Kailali	9.3	4.0	82.7	4.0
Dadeldhura	6.7	3.3	73.3	16.7
Total	9.7	8.0	79.7	2.6

Source: Field Study, 2004

As presented in **Table 6.3** three-fourth of the sampled farmers responded positively that inputs were timely available and in desired quantity.

Table 6.3: Availability of Agriculture Inputs (percent)

District	Timely Available	Desired Quantity
Jhapa	83	87
Ilam	55	70
Chitwan	93	67
Kavre	75	68
Palpa	76	72
Kailali	70	83
Dadeldhura	84	89
Total	**75**	**76**

Source: Field Study, 2004

6.2.3 Input Quality

Figures presented in **Table 6.4** show that the majority of the sampled farmers responded that the availability of inputs were of medium quality. It indicates that measures should be adopted to improve the quality of inputs, by strengthening the existing regulatory mechanism.

Table 6.4: Farmers' Response on the Quality of Inputs Supplied (percent)

Input	High	Medium	Poor	Don't Know
Seed	18.7	72.5	7.3	1.6
Urea	30.1	52.4	14.5	3.0
DAP	32.9	48.1	12.7	6.3
Potash	36.4	46.2	11.2	6.3
Pesticide	23.5	57.4	12.2	7.0
Others	33.3	33.3	25.0	8.3

Source: Field Study, 2004

6.2.4 Sources and Reliability of Irrigation

Figures presented in **Table 6.5** show that more than 70% of the sampled farmers have irrigation facility in both the upland (*Bari*) and lowland (*khet*). Farmers of Jhapa district have the highest irrigation facility among the sampled districts followed by Kailali. Districtwise, about 93% of sampled farmers of Jhapa and 16.60% of the sampled farmers of Palpa districts have irrigated land. Canal is the major source of irrigation in the selected districts. About 51% of the farmers responded that canal is their major source of irrigation. Shallow tube-well is the most popular means of irrigation among the farmers of Kailali district. Sampled farmers of Palpa district use plastic pond for irrigation.

Table 6.5: Status and Source of Irrigation

District	Irrigated (ha)	Source of irrigation (%)				Un-irrigated (ha)	Total Land
		Canal	Deep Tube well	Shallow Tube well	Others		
Jhapa	0.93	84.2	15.8	0.0	0.0	0.07	1.00
Ilam	0.41	88.2	0.0	2.9	8.8	0.43	0.84
Chitwan	1.13	81.8	2.3	0.0	15.9	0.09	1.22
Kavre	0.33	83.3	0.0	6.7	10.0	0.33	0.66
Palpa	0.04	0.0	0.0	0.0	100.0	0.20	0.24
Kailali	1.07	0.0	1.2	61.9	36.9	0.27	1.34
Dadeldhura	0.26	36.0	0.0	0.0	64.0	0.43	0.69
Total	0.69	51.1	1.8	20.7	26.4	0.26	0.95

Source: Field Study, 2004

The analysis based on the responses of the farmers has shown that the reliability of irrigation is weak in all the sampled districts because 41% of the sampled farmers confirmed the reliability of irrigation facility whereas 59% responded that irrigation facilities were not reliable (**Table 6.6**).

Table 6.6: Reliability of Irrigation (percent)

District	Reliable	Not Rellable
Jhapa	49	51
Ilam	57	43
Chitwan	17	83
Kavre	61	39
Palpa	62	38
Kailali	34	66
Dadeldhura	30	70
Total	**41**	**59**

Source: Field Study, 2004

6.2.5 Technical Support

Government agencies (agriculture service center/sub-center, government farm), private agencies and others provide the technical support to the farmers. The field information presented in **Table 6.7** shows that about 71% of the farmers received agriculture supports service from the government agencies whereas 15% of them took such services from private agencies. The results have shown that for technical support there is heavy

reliance on governmental agency. It also indicates that liberalization policy is yet to attract the private sector to provide technical services to the farmers.

Table 6.7: Source of Technical Support (percent)

District	Government Agency	Private Agency	NGO/Others
Jhapa	31	31	38
Ilam	80	20	0
Chitwan	100	0	0
Kavre	85	9	5
Palpa	65	27	8
Kailali	50	22	28
Dadeldhura	100	0	0
Total	**71**	**15**	**14**

Source: Field Study, 2004

6.2.6 Marketing

Radio and television are the effective media for providing marketing information to the Nepali farmers. Price information to the farmers is very essential to plan their farming and change the cropping patterns.

The figures presented in **Table 6.8** show that about 58% of the sampled farmers listen to the agriculture price broadcast over Radio Nepal and 67% of them watch agriculture programme shown on television. Farmers of Kailali district were found less aware of the price information because very few of them listen to radio and watch television.

Table 6.8: Listening of Radio/TV for Price Information (percent)

District	Listening of Radio/TV	Listening of Agri. Price
Jhapa	70	53
Ilam	70	57
Chitwan	98	72
Kavre	90	87
Palpa	76	72
Kailali	16	16
Dadeldhura	95	95
Total	**67**	**58**

Source: Field Study, 2004

Majorities of the sampled farmers sell their agricultural products immediately after harvest (**Table 6.9**). The farmers producing perishable agricultural products have to sell their produce immediately after harvest. Many of the farmers who produce non-perishable agricultural commodities also sell their produce just after harvest. More than one-third of the sampled farmers wait for high price to sell their products in the market. This indicates that there is poor post harvest management of agricultural produces. Consequently the farmers are bound to sell immediately after harvest at low prices.

Table 6.9: Selling Time of Agriculture Product (percent)

District	Immediately After Harvest	During High Price
Jhapa	50	23
Ilam	68	32
Chitwan	55	45
Kavre	45	55
Palpa	77	23
Kailali	80	20
Dadeldhura	50	50
Total	**66**	**34**

Source: Field Study, 2004

The information presented in **Table 6.10** shows that traders are the major source of market information about agricultural products of the sampled farmers followed by farmers themselves in all the sampled districts. Other institutions like District Agriculture Development Office, co-operatives, and non-governmental organizations play minor role as far as market information is concerned. This indicates that while providing market information, there may be ample possibilities that traders will provide such information more in their favor rather than that of the producers.

Table 6.10: Source of Market Information (percent)

District	DADO	Farmer's Group/ Co-operatives	NGO	Trader	Farmers Himself	Other
Jhapa	0.0	3.5	0.0	89.7	3.5	3.5
Ilam	0.0	0.0	0.0	74.4	25.6	0.0
Chitwan	11.1	6.7	0.0	73.3	8.9	0.0
Kavre	8.6	7.1	1.4	65.7	17.1	0.0
Palpa	13.9	11.1	2.8	47.2	19.4	5.6
Kailali	5.1	12.8	0.0	38.5	38.5	5.1
Dadeldhura	2.7	13.5	0.0	32.4	51.4	0.0
Total	6.4	7.7	0.7	60.5	23.1	1.7

Source: Field Study, 2004

Local traders played a major role in fixing the price of agricultural commodities in the sampled districts (**Table 6.11**). More than three-fourth of the sampled farmers' response was that traders fixed the price of their agriculture commodities. In Jhapa and Palpa districts traders were absolutely responsible for fixing the price; but in Kailali and Dadeldhura farmers were also involved in the process. These facts indicate that the farmers have low bargaining capacity because they are not organized as traders.

Table 6.11: Price Fixation Agent (percent)

District	Farmer Himself	Traders	Other
Jhapa	0	100	0
Ilam	5	93	2
Chitwan	2	93	5
Kavre	33	67	0
Palpa	0	100	0
Kailali	50	50	0
Dadeldhura	50	50	0
Total	**22**	**77**	**1**

Source: Field Study, 2004

6.2.7 Farmer's Relations with Stakeholders

Farmers have moderate relations with different stakeholders like service institutes, wholesalers and retailers. More than 20% of the sample farmers responded that they have good relations with wholesalers and retailers (**Table 6.12**). They do not have forward and backward linkages, rather they are closed and isolated and this is acting as a constraint to change the mindset of the agricultural producers from farmers to entrepreneurs.

Table 6.12: Farmers Relations with Different Stakeholders (percent)

Relation	Service Institute	Wholesalers	Retailers	Millers	AIC	Agriculture Farm
Good	7	21	24	1	7	2
Moderate	20	22	30	6	11	3
No	74	58	46	92	82	94
Total	**100**	**100**	**100**	**100**	**100**	**100**

Source: Field Study, 2004

6.3 INPUT MARKET AND PRICES SUPPORT

6.3.1 Input Subsidy and Prices Support

Prior to Eighth Five Year Plan (1992 - 1997), the government of Nepal had the policy to provide subsidy to the farmers on chemical fertilizers. Besides, the government implemented a policy to increase its application by educating the farmers about the importance of and balanced use of organic and chemical fertilizers.

The Agricultural Perspective Plan (APP) (1997/98-2016/17) identities the major objectives of chemical fertilizer policies as follows: (i) enhancement of the role of private sector by removing financial and policy constraints of fertilizers distribution (ii) involvement of Agriculture Inputs Corporation (AIC), a public enterprise having monopoly to inputs' import and wholesale trade, in monitoring and storage of chemical fertilizers (iii) gradual removal of fertilizers subsidy on nitrogen (iv) adjustment of subsidy on fertilizers in such a way that price may not vary from the 15 to 20% compared with India and (v) privatization of the fertilizer marketing of unsubsidized fertilizers.

The Ninth Five Year Plan (1997 - 2002) was formulated and implemented together with APP. The APP had the policies to adjust fertilizer subsidy with India. The Plan had committed to phase out fertilizer subsidy in the first phase of implementation and privatize marketing as well. Plan document stipulated the policy to encourage the establishment of manufacturing industry of chemical fertilizers in the country.

In the process to translate the policy into implementation, the Government reduced the amount of subsidy since fiscal year 1997/98 and totally removed it since fiscal year 1999/2000. With the withdrawal of subsidy, private sector businessmen are allowed to import and distribute chemical fertilizers. Consequently, semi-governmental enterprises like National Trading Limited and Salt Trading Limited and several businessmen are

involved in importing and distributing fertilizers. A fertilizer company named Luna Fertilizers Manufacturing Company is established in Jhapa.

In the privatization process, public sector Agriculture Inputs Corporation (AIC) was split into Agricultural Inputs Company Limited (AICL) and National Seeds Company Limited (NSCL) in 2001. Investment of the Government on the corporation has been transferred to the hands of private businessmen.

6.3.2 Supply, Use and Prices of Chemical Fertilizer

The withdrawal of fertilizer subsidy and public sector monopoly on import exercise its impact on the price level, marketing volume and above all, its application by farmers. After the removal of fertilizer subsidy, nominal growth into price has been noticed in some cases whereas it remains unchanged in other cases.

Table 6.13: Subsidies on Chemical Fertilizers in Nepal (1990/91- 2000/01)

Fiscal Year	Subsidy (NRs. in million)	Share in Annual Agricultural Budget %	Share in AGDP %
1990/91	590.10	37.64	1.06
1991/92	487.69	37.04	0.75
1992/93	462.78	21.80	0.66
1993/94	327.98	14.25	0.41
1994/95	569.27	21.06	0.66
1995/96	498.37	21.74	0.51
1996/97	501.60	25.53	0.46
1997/98	205.06	9.21	0.18
1998/99	175.30	8.70	0.13
1999/00	0.00	0.00	0.00
2000/01	0.00	0.00	0.00

Note: Share derived by the investigator based on the Agricultural Budget and AGDP taken from Agricultural Statistics, 2001/02.

Source: Agriculture Sector Performance Review, Volume I, MOAC/ ADB, and November 2001

The share of subsidy in governmental budget remained huge before its removal. As the data given in **Table 6.13** depicts, 37.64% of agriculture budget was spent for subsidizing chemical fertilizers in 1990/91, which was narrowed to 37.04%, 21.80%, 14.25%, 21.06%, 21.74% and 25.53% in 1991/92, 1992/93, 1993/94, 1994/95,1995/96 and 1996/97, respectively. 9.21% of agricultural budget was spent on fertilizer subsidy in 1997/98 that was narrowed to 8.70% in 1998/99 and there has been no subsidy from 1999/00 onwards. The share of it ranged from 0.13% to 1.06% of AGDP. The withdrawal of subsidy was done gradually by reducing its impact on agricultural budget.

Price of complex, which is widely used by farmers, increased from 1990/91 to 1995/96 but remained unchanged from 1995/96 to 1998/99 (**Table 6.14**). Price of urea, which is also widely used by the farmers, increased annually by 10.54% in the first half of the nineties and by 12.64% in the second half. Price of potash increased by 29.76% and 10.37% in the first and second half of nineties, respectively.

Table 6.14: Sales Price of Chemical Fertilizers (Price NRs. per kg)

Fiscal Year	Sulphate	Complex	Urea	TSP	Potash	DAP
1990/91	3.11	4.50	4.07	3.96	2.31	-
1995/96	6.90	10.00	6.72	8.00	8.50	16.88
1996/97	-	-	6.72	-	8.50	16.88
1997/98	6.90	-	7.40	-	9.35	18.57
1998/99	6.90	10.00	7.40	8.00	9.35	18.57
1999/00	11.00	-	9.64	-	13.90	20.40
2000/01	10.30	-	10.40-13.98	-	13.90	18.54-19.50

Source: Agricultural Statistics of Nepal, ASD/ MOAC, 2001/02.

When subsidy was entirely withdrawn in 1999/00, prices of sulphate, urea, and DAP increased to NRs. 11.00, Rs. 9.64 and NRs. 20.40, per kilogram respectively. In 2000/01, price of DAP and sulphate decreased but that of urea increased and potash remained the same compared to the previous year.

Table 6.15: Sales of Chemical Fertilizers, 1980/81- 2000/01 (in metric tons)

Fiscal Year	Chemical fertilizers			Annual Growth Rates of Supply
	Total Sales	AICL	Private Sector	
1980/81	54000	54000	-	-
1985/86	102196	102196	-	-
1990/91	168637	168637	-	-
1991/92	185797	185797	-	10.17
1992/93	169767	169767	-	-8.62
1993/94	148413	148413	-	-12.57
1994/95	176688	176688	-	19.05
1995/96	133250	133250	-	-24.56
1996/97	122223	122223	-	-8.27
1997/98	108728	91178	17550	-11.04
1998/99	156827	88350	68477	44.23
1999/00	148187	71460	76727	-5.5
2000/01	146365	45220	101145	-1.22
2001/02	140766	39358	101408	-3.32

Source: Agricultural Statistics of Nepal, ASD/MOAC, 1990, 2002, 2003

Despite the increase in price of fertilizer after the withdrawal of subsidy, sales value increased. In the1980s, the sales volume of chemical fertilizers was low. In the1990s, its sales volume increased as compared to the 1980s. In the 1990s, the sales volume decreased in the first half and increased in the second half. In the first year of the withdrawal of subsidy supply of fertilizers sharply decreased (**Table 6.15**). The application of fertilizers went up after the privatization of inputs and supply. It shows that when the government was supplying fertilizers, the price was low; but the supply was not adequate. Farmers had to face acute shortages at the peak period. After the deregulation and entry of private sector, supply has increased and farmers are able to use more fertilizers.

Table 6.16: Nutrient Use of Chemical Fertilizers (1981/82-2000/01)

Fiscal Year	Total Fertilizer Nutrient Use (Kg/ha)
1981/82	21.92
1997/98	34.7
1998/99	42.0
1999/00	50.1
2000/01	57.9

Source: Agriculture Sector Performance Review, Volume I, MOAC/ ADB; For 1981/82 data is estimated on the basis of fertilizer consumption and cultivated land as per Agriculture Statistics, DFAMS, 1990

As a result of increased supply, the nutrient use of fertilizers increased to 42.0 kg per hectare in 1998/99 as compared to 34.7 kg per hectare in 1997/98 (**Table 6.16**). It reached 50.1 kg in 1999/00 and 57.9 kg in 2000/01. The increased use of fertilizers has been due mainly to two reasons: (i) adequate and timely availability and price stagnation, and (ii) increasing awareness of farmers about the need of using fertilizers for raising productivity. Apparently, the figures on the sales of fertilizers given in **Table 6.15** do not support the nutrients used as shown in **Table 6.16**. But in real terms there is more use of fertilizers and it was informed to the study team in the field that the sales data of fertilizers were under reported because of their unrecorded imports from India. The poor quality of fertilizers was reported in the liberalized commodity market, which could exercise adverse effects on the production, if not controlled in time. Government mechanism to monitor and control the quality of fertilizer is still weak. In this context, it is essential to develop capacity of the private sector in controlling the quality of fertilizers and capacity of government in planning and monitoring quality their standard in the markets.

6.3.3 Minimum Support Prices

Government introduced minimum support price for major agricultural products in the Seventh Plan. However, such support prices were not found beneficial. **Table 6.17** has been prepared plotting the production costs and farm gate prices of paddy in Eastern (Morang), Central (Parsa) and Western (Kailali) Nepal to analyze the effects of minimum support price.

Table 6.17: Minimum Support Price & Farm Gate Price of Paddy (paddy coarse NRs./kg)

Year	MSP	Morang			Parsa			Kailali		
		PC	FGP	POPC %	PC	FGP	POPC %	PC	FGP	POPC %
1976/77	1.12	0.69	0.89	28.98	0.59	0.80	35.59	0.32	0.75	134.37
1991/92	3.80	3.07	5.00	62.86	3.20	4.98	55.62	3.38	4.87	44.08
1995/96	6.20	4.58	6.50	41.92	3.40	6.50	91.17	NA	NA	-
2000/01	-	6.46	9.12	41.17	5.36	8.75	63.24	6.22	8.16	31.18

Note: MSP= Minimum Support Price; PC= Production Cost; FGP= Farm Gate Price; NA= Not Available; POPC= Profit Margin Over Production Cost.

Source: ASD/MOAC, Agriculture Statistics of Nepal (1976/77, 2000/01, 2001/02); EASD/DOA, Cost of Production, 1991/92, 1995/96 and Agriculture Marketing Information Bulletin, MDD of Respective year

The farm gate prices of paddy have been higher than the production costs in all the districts. But the minimum support price had not been found effective to provide this level of farm gate prices in all districts in 1976//77. In the following years, farm gate prices in Eastern, Central and Far-Western Nepal were found higher than the minimum support price of paddy. Before 1997/98, the year when minimum support price was removed, the profit margin received by the farmers on paddy was found lower than what it is at present. Minimum support price could not influence farm gate prices because of very small volume of purchase by the public sector due to inadequacy of budget and limited storage capacity. There is little impact of price policy on the farm gate price level but it has been a weapon to the politicians to spell it out as a programme in favor of fair price to the farmers.

The year 1997/98 could be regarded as an important year in the history of policy liberalization as the government abandoned minimum support price policy at that time.

The government played a limited role in the agricultural product supply by implementing commodity production programme and reducing transaction costs. It has also provided agricultural market information and developed market infrastructure to reduce the marketing costs.

Government has introduced a policy to withdraw its involvement in marketing food commodities launched with a view to control prices. After 1998/99, prices of food and agricultural commodities are determined solely by the market mechanism. Government's food price policy has been to avail food grains in high hills by increasing production of potential cereals and income of poor families. The food policy has allowed transport subsidies on food grains that are supplied to the remote hilly districts. Food grain stocks at the level of 40,000 m.t. are maintained to supply food grains at times and places of drought.

6.3.4 Consumers' Prices

During the liberalization period, consumers' real prices of food items, non-food items and overall index had increased in decelerating rates. Figures given in **Table 6.18** show that prices of food items went up at the rates of 12.09%, 7.94% and 5.86% per annum during the second half of the1980s, first half of the1990s and second half of the 1990s respectively. In the same periods, the cereal and grain prices had increased by 10.25%, 6.68% and 4.58% per annum. Similarly prices of non-food items had increased by 10.50%, 9.24% and 7.59% per annum during the second half of the 1980s, first half of the 1990s and second half of the 1990s respectively. Overall price index recorded on increase by 11.51%, 8.40% and 6.66% per annum during second half of the 1980s, first half of the 1990s and second half of the 1990s respectively. Rise in prices of cereal and grains and food items had been the lowest among all groups at all the times. In the 1990s, the price rise of has been the lowest. It shows that there is rise in price of non-food items than that of food items. Such difference in price rise has affected the farmers.

Table 6.18: Consumers Real Prices in Urban Nepal

Item	1983/ 1984	1991/ 1992	Annual Growth % (1983/ 84 - 1991/92)	1995/ 1996	Annual Growth (1991/92 - 1995/96)	1995/ 1996	2000/ 2001	Annual Growth % (1995/96 - 2000/01)
Food/beverage	100	249.2	12.09	338.4	7.94	100	133	5.86
Restaurant meal	100	307	15.05	469.6	11.21	100	162.9	10.25
Grains and cereal product	100	218.4	10.25	282.9	6.68	100	125.1	4.58
Rice	100	214.5	10.00	280.6	6.54	100	-	-1
Pulses	100	282.4	13.85	446.8	12.15	100	145.8	7.83
Vegetable/fruit	100	270.8	13.26	389.4	9.50	100	121.6	3.98
Spices	100	341.6	16.59	399.1	3.96	100	153	8.87
Meat, fish and eggs	100	273.6	13.40	380.5	8.59	100	137.8	6.62
Milk and milk products	100	283.9	13.93	375.1	7.21	100	144.7	7.66
Oil/clarified butter	100	247.3	11.98	284.7	3.58	100	105.7	1.11
Sugar	100	196.8	8.83	290.3	10.20	100	126.4	4.79
Beverages	100	220.9	10.41	294.5	7.45	100	144	7.57
Non-food Items and service	100	222.4	10.50	316.8	9.24	100	144.2	7.59
Overall Index	100	239.1	11.51	330.2	8.40	100	138.1	6.66

Source: Growth analyzed on the basis of data from Agricultural Marketing Information Bulletin, MDD, 1997,1999 and 2002.

6.4 MODERNIZATION OF AGRI-BUSINESS

6.4.1 Enhancing Product Quality and Sanitary/Phytosanitary Controls

One of the major aspects in agriculture trade is quality. The consumers from the importing countries are becoming increasingly quality conscious and demanding stricter quality requirements. Exporting countries have to comply with the specifications laid down by the regulatory agencies in importing countries. Most of the exporting countries have built up their facilities to meet the requirements as per the prescribed cleanliness SPS agreement and requirement of importing countries. The SPS specifications include parameters like pesticide residues, aflatoxin, trace metal contamination and microbial contamination.

The producers, traders and even the support agencies working for the development of agriculture in Nepal are not fully aware of the prescribed standards relating to cleanliness, pesticides residuals and microbial load. To improve the present situation of agricultural export the farmers, as well all other stakeholders, should be made aware of such quality requirements. Creation of basic awareness on the quality needs among the stakeholders, adoption of technologies for quality production, development of necessary infrastructure like drying yards, grading and shorting centers, storage facilities etc. are very essential for boosting up agricultural productions and their marketing. Such developments should happen at different levels like - production, processing, transportation and marketing.

Standardization and grading is a prerequisite for improved marketing. It has become a fundamental marketing function without which the prospects of the Nepali products entering international markets will be diminishing with the passage of time. Actions are to be taken to ensure that final customer requirements are identified and met through the quality production/assurance. To enter the international markets facilities (quality evaluation and upgradation laboratory) have to be developed to comply with the quality standards for export. Such laboratories should have international accreditation. For improving the quality of the products R & D on quality control are needed both in production as well as in post harvest product handling

The Indian market is less stringent in terms of quality requirements compared to the American and European markets. Thus, Nepal has ample opportunity to grip the demand from the Indian markets. For example, Nepali lentil is not found to be price competitive from price analysis. But, lentil is being exported to India due to quality competitiveness.

Qualities of many of the Nepali agricultural products are believed to be quite good. But due to the lack of quality assurance mechanism we are facing difficulties in the international markets. Focus group discussions indicate that, in general, product quality is not much low as compared to Indian produces. However, Nepali products quality is inadequate vis-a-vis the world market. The reasons for inadequacy can be summarized as followings:

- Poor availability of varieties/breeds that produce better quality
- Low investment in farms due to low returns from agriculture
- Poor availability of production technology;

- Inadequate harvesting and post harvest management practices; not use of quality standards to grade produces according to variety/origin/external appearance/degree of damage, etc;
- Lack of post harvest know-how/equipment/facilities;
- Technological shortcomings at processing level;
- Use of low quality packaging materials and inappropriate transport means towards the final markets.

Services to support a comprehensive quality measurement system (QMS), covering good agricultural practices (GAP), good management practices (GMP) and hazardous analyses of critical control points (HACCP) are virtually non-existent. The country is poorly not equipped to apply sanitary and phytosanitary controls in compliance with the WTO guidelines. This translates into the inability to control the levels of hazardous elements in exported products (e.g. aflatoxin in ginger and ocratoxin in coffee).

6.4.2 Increasing Access to Agricultural Market Information Systems (AMIS)

A system of agriculture market information is not functioning effectively and is poorly placed prioritized and this service is highly inadequate. Key individuals, commodity associations and producers report inadequate "availability of market information" as an important bottleneck constraining their domestic and foreign market performance.

6.4.3 Integrating Production Chains

Focus group discussions indicate that the level of efficiency in domestic marketing of agricultural products is quite low. It was reported that there were variations in prices at different stages of marketing. Such variations in price are a direct result of several bottlenecks. They are:

- Lack of integration of the various components of the chain, which leads to an unduly high number of intermediaries playing a role in the marketing of agricultural outputs.
- Limited degree of producers' organization. Even if the organizations are established, they are not effective.
- Limited use of modern sales techniques and procedures, as opposed to traditional ones.
- High incidence of transport costs.
- Inadequate planning in the production of supplies.
- Hurdles due to imposition of duties at local level by the local bodies.

Reduction of current, high transaction costs in the marketing of agricultural products in Nepal will require a shortening of the marketing chains. As already shown in several examples of production chains, products sold for domestic consumption do not exhibit such high transaction costs or such lengthy marketing chains as do products bound for export. This applies in particular to horticultural products, due to the limited number of operators who presently control the domestic marketing of these products. Producers should pursue a higher degree of control over the marketing of their horticultural harvests, by taking advantages, through the use of contracts, of the future nationwide enlargement of retailing systems other than the traditional ones.

There is a need to expand the use of contracts as an effective way to shorten marketing chains; to increase the use of more transparent and effective marketing facilities already operating in the country; and to introduce new facilities as electronic auctions for trading of agriculture produces.

6.4.4 Increasing Margins by Improving Infrastructure

Despite considerable progress in the last decades in infrastructure, Nepal has considerable deficiencies in infrastructure needed for production that continue to hamper the competitiveness of Nepalese agricultural products in foreign markets. The country has made quite a significant advancement in telecommunications, electricity, and road networks. However, it is not adequately available in the production sites i.e. rural areas and which are considered to be the serious bottlenecks. Similarly, important regions of the country that have significant productive potentials are still deprived of basic infrastructure. Overcoming such elementary bottlenecks will necessarily require private-sector participation.

The road networks in Nepal have a limited outreach compared to neighboring countries. Limited access to electricity is a major constraint in the use of processing facilities, modern communications and production equipment. On the other hand, the electricity tariffs are so high that it makes the produces less competitive in the internal and external markets. Despite progress made in the field of telecommunications in the decades of 1980s and 1990s, much remains to be done in Nepal to expand telecommunications coverage, particularly in rural areas of the country.

6.4.5 Risks in Agricultural Production

Nepali people have been taking to agriculture as a way of life and a means for their subsistence from time immemorial. But it is still susceptible to various risks. In the Nepali value system, land is still regarded as the source of security and stability. The nature of risk in Nepali agriculture is originated due to its structure and composition. With the intervention of various forms of measures by the government to make agriculture more open, the degree of vulnerability have further increased.

In the traditional subsistence form of economy, output and consumption are identical and one or two staple crops (usually rice, maize wheat, millet) are the chief sources of food intake. Output and productivity are low and only the simplest tools are used. Capital investment is minimal while land and labor are the principal factors of production. There is overcrowding of people. So more labor is applied to shrinking (or shifting) parcels of land leading to the decline in the marginal productivity of additional labor. Labor is underemployed for most of the year, although workers may be fully occupied at seasonal peak periods such as planting and harvesting. Farming is heavily dependent on monsoon rains and the credit is mostly supplied by the rich landowners at a higher rate of interests. The family members themselves are involved in cultivation and labor exchange is done during the peak period of sowing and harvesting seasons. Some peasant farmers intermittently employ one or two landless laborers. The environment is harsh and static. Technological limitations, rigid social institutions, and fragmented markets and

communication networks between rural areas and urban centers tend to discourage higher levels of production. In a nutshell, the farming activities are done entirely in a closed form with no or little relation with the potential markets.

Nepali farm size is extremely small and cultivation is dependent on the uncertainties of a highly variable rainfall. Against such background, the main motivating force in the farmer's life may be the maximization, not of income, but of his family's chances of survival. A small farmer may be very reluctant to shift from a traditional technology and crop pattern that, over the years, he has come to know and understand to a new one that promises higher yields but may entail greater risks of crop failure. The risk-avoiding peasant farmers are likely to prefer a technology of food production that combines a low yield per hectare but less fluctuations around the average than to alternative technologies and crops that may promise a higher yield but with possible high risks.

6.4.6 The Transition of Mixed Farming With Food and Non-Food Production

It is unrealistic to think in terms of instantly transforming the traditional Nepalese agrarian system into a highly specialized commercial farming system. For small farmers, exclusive reliance on cash crops can be even more precarious than pure subsistence agriculture, since risks of price fluctuations are added to the uncertainty of nature. Diversified or mixed farming therefore represents a logical first step in the transition from subsistence to specialized production. In this stage, the staple crop no longer dominates farm output since new cash crops such as fruits, vegetables, potatoes, coffee, and tea are grown together. These new activities can take up the normal slack in farm workloads, when the underemployment is highly dominating in the rural areas.

6.4.7 Forward Linkage with Agro-Industry Sector

The development of agriculture depends very much in the development of agro-based industries that will add value on the agricultural products, which in turn will improve the terms of trade of the country. Forward linkage of the agriculture sector with the industry will help in the improvement of agriculture. In Nepal the linkage between the production of wheat and the development of food industries like bakery, noodles, and biscuits are the examples in this regard. At the present situation the forward linkage of agriculture with industries is still lacking. Considering the internal as well as Indian and international markets, the scope for processed products is quite significant and seems to be growing. The potential for development of forward linkage through processing is quite high. Commodities like tea, coffee, potato, oil, maize and other cereals, fruits, vegetables and spices are potential for processing and value addition.

The available information indicates that the agro-based industries produce 47.2% of the value addition in the industry sector (**Table 6.19**). However the agriculture production still has a weak forward linkage with these groups of agro-based industries. Manufacture of tobacco products, vegetables & animal oils & fats, manufacture of malt liquors and malt are the major NSIC group producing about 56.5% of the value addition of the total agro-based industries and the rate of value addition of these industries is quite high ranging from 24.8 to 425.6%. However the forward linkage of agriculture with these industries is

still not strong enough. These manufacturing industries use primarily imported raw materials[8].

Table 6.19: Indicators of Agro-based Manufacturing Establishments by Type & NSIC, 2001/02

(NRs. '000')

NSIC	NSIC Name	Census Input	Census Output	Census Value added
1511	Manufacture of meat and meat products	35630	47827	12197
1513	Processing and preserving of fruit and vegetables	59372	91617	32245
1514	Vegetable and animal oils and fats	10106246	12609187	2502941
1520	Dairy products	1882946	2235009	352063
1531	Grain mill products	4917879	5820834	902955
1533	Animal feeds	517694	767489	249895
1541	Bakery products	636440	955526	319086
1542	Manufacture of sugar	1215452	2002869	787417
1543	Coca and confectionery products	557636	757405	199769
1544	Manufacture of noodles and similar products	1156413	1850357	693944
1549	Manufacture of food products NEC	512713	839464	326751
1551	Distill rectify and blending of spirits	570186	1931937	1361751
1553	Manufacture of malt liquors and malt	435516	2357221	1921705
1554	Soft drinks and mineral waters	516994	1031819	514825
1600	Manufacture of tobacco products	1003378	5273486	4270108
1724	Manufacture of jute and jute products	1081371	1778753	697382
1911	Tanning and dressing of leather	507833	744541	236708
	Total of agro-based products	**25713699**	**41095341**	**15381742**
	Grand Total of manufacturing industries	**62206455**	**94811061**	**32604606**
	% of agro based products	**41.34**	**43.35**	**47.18**

Source: Census of Manufacturing Establishments, 2001/02, CBS

Grain mill products, manufacture of sugar, manufacture of noodles & similar products, manufacture of jute and jute products has strong backward linkage with the agriculture. **Fig. 6.1** shows the production trend of some of the agro-based products. Products like jute goods, noodles, biscuits, bakery and sugar have good backward linkage with the agriculture production. The share of these industries in total agro-based products is about 26%. The production of noodles and flour has high positive correlation with wheat production indicating strong forward linkage of wheat production with noodles and related industries. However these groups of industries have relatively low value addition percentage (18 to 64.8%).

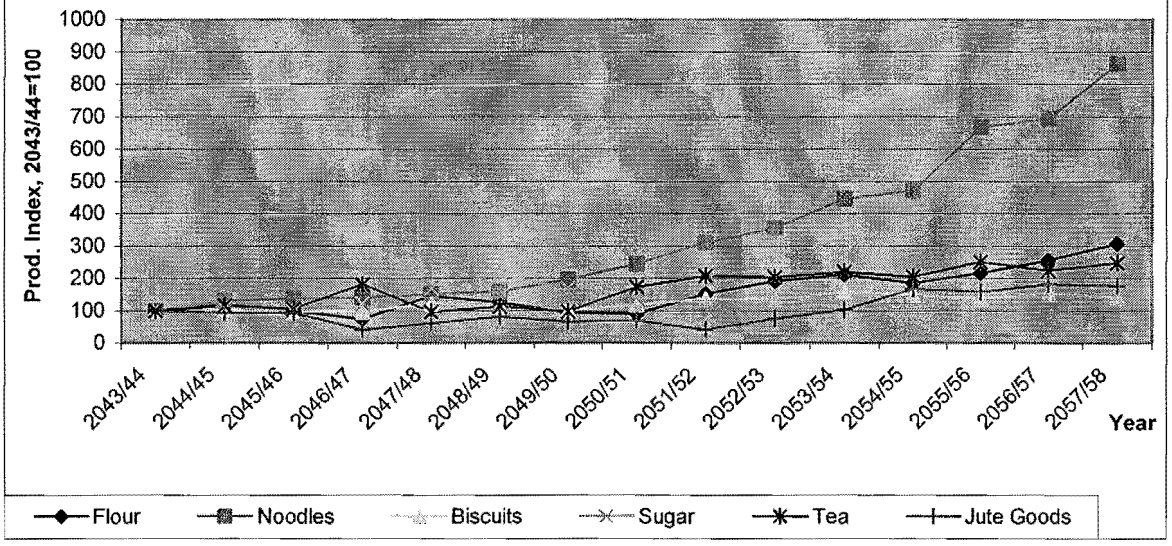
The forward linkage of agriculture with processing & preserving of fruit and vegetable is very week. The share of these industries in the total agro-based products is only 0.2%.

Institutional development of agricultural producers is one of the important aspects in strengthening the linkages between agriculture and industries. The majority of the agriculture production units are very small with poor investment capacity. The marketable volume of these individual units is also very small. Such production units would be very susceptible to various production and marketing stress and would not support in the development of industries. The reported production and productivity situation is not

[8] *Manufacture of tobacco products utilized inputs equivalent Rs. 1003378 (2001/02) and Nepal imported tobacco & beverage equivalent Rs. 848400000 during the same year*

satisfying and does not create environment for the development of agro-based industries. Low productivity is one of the main reasons for relatively high production costs and in addition the production volume is less attractive for the development of processing industries.

Fig. 6.1: Production Trend of Major Agro-based Industries



6.5 AGRICULTURE PRODUCTION AND PRODUCTIVITY TREND

According to Agriculture Sector Performance Review food grains and livestock are the major two components of AGDP. Over the period of the 1990s, the share of food grains and livestock in AGDP was 34.3 and 28.6%, respectively. All crops taken together provide 61.2% of AGDP. For this study purpose, the crops have been grouped based on the information provided in Statistical Information on Nepalese Agriculture. The crops reviewed here comprise cereals, cash crops, fruits, and vegetables and the results reported are at the aggregate level using time series analysis of data from the Statistical Information on Nepalese Agriculture, 2002/03.

6.5.1 Trends in Cereal Crops

Cereal crops cover most of the cropped area in the country. Paddy, maize, millet, wheat, and barley are the major crops grown and altogether absorbed around 77.3% of the total cropped area in 2002/03. Moreover, the share of the cereal crops has increased over the course of the past decade indicating that the diversification away from cereals has not occurred over the past decade at the national level (ANZDEC, 2002). However at the district and pocket levels there are some good examples of diversification.

The average annual growth of cereal crops production was 2.94% during the period of 1984/85 to 2002/03. The average growth rate of food grains production barely kept pace with overall population growth. The analysis of growth rate in the period of 1984/85-

1992/93 (period 1) and 1993/94-2002/2003 (period 2) indicates that the growth rate has decreased from 3.41 (in the period 1) to 2.94 (in the period 2).

The analysis of the area and production data of the period of 1984/85 to 2002/03 (overall) indicates that the cereal based cropping pattern has not changed for years and diversification in the cropping pattern has not occurred at all.

Paddy is the most important cereal crop grown in Nepal both in terms of cultivated area and production. The growth rate of paddy has improved in the period-2 and the increase in its production is due to its entranced yields. For the period-2, 70% of the production increase was explained by the increase in production area. For 1984/85 to 2002/03 the share of yield in the production growth was 74%. Yet, with an average paddy yield of only 2.3 tons/ha over the period, the yield levels are still very low by regional standards. Paddy occupied 46% of total cropped area under cereals (2002/03).

Table 6.20: Growth Rates of Cereal Crops at Different Periods of Time

Crops	Period I (1984/1992)			Period II (1993/2003)			Overall		
	Area	Production	Yield	Area	Production	Yield	Area	Production	Yield
Paddy	-0.17	1.91	2.07	0.94	3.02	2.13	0.72	2.47	1.75
Maize	3.70	6.18	2.50	1.03	2.36	1.32	1.64	3.13	1.57
Wheat	3.08	4.18	1.29	0.69	4.05	3.37	1.53	4.11	2.66
Barley	0.73	2.49	1.76	-4.57	-2.73	1.88	0.35	1.96	1.74
Millet	5.10	8.92	3.97	1.26	1.23	-0.03	3.52	4.16	0.87
Cereals	**1.74**	**3.41**	**1.72**	**0.88**	**2.95**	**2.09**	**1.30**	**2.94**	**1.67**

Source: Calculations based on SINA, CBS data, 2003

Maize is the second most important cereal in terms of total cultivated area. It occupies around 25% of the total cropped area under cereals. The growth rate of production, productivity and yield was quite high in the first period however the high growth rate was not sustained in the second period. For the first period the production growth was as high as 6.18 whereas it was only 2.36 for the second. However the yields are extremely low, at only 1.6 tons per ha on an average for the period, suggesting that the farmers do not adequately adopt improved production technologies.

Wheat is the third most important cereal in terms of total cultivated area. It occupies around 20% of the total cereal area. The performance of wheat is the success case within cereals category. Production growth performance has been 4.11% on average for the period 1984/85 - 2002/03. Moreover, yield growth has been the major source of this growth. In the first period growth in area was the main source of production growth (70%) whereas in the period 1984/85 - 2002/03 the main source of growth was yield (83%). In spite of its high growth rates, total yields are still very low.

Millet and Barley are relatively minor cereal crops in terms of area coverage. Both crops in total occupy around 8.6% of the total cereal area. The growth rates for millet were very high for the period-1 however it was not sustained in the period-2. Barley shows decreasing trend in area coverage. The production growth rate had been negative (-2.73)

mainly due to negative growth rate in area (-4.57). The yield performance of both the crops is equally poor.

6.5.2 Trends in Cash Crops

Cash crops continue to be one of the important sources of growth. The production of cash crops during the period 1984/85 - 2002/03 grew at a high rate. It was even higher during the first period. Oil seeds, potato, sugarcane and tobacco are the crops included in the analysis as cash crops. These crops in total represented around 9% of the total cropped area in 2002/03. Sugarcane and potato are the main crops contributing to the high growth rate of cash crops. Both potato and sugarcane demonstrated high growth of area and yield. The growth rate of tobacco is negative both in terms of area and total production.

Table 6.21: Growth Rates of Cash Crops at Different Periods of Time

Crops	Period I (1984/1992)			Period II (1993/2003)			Overall		
	Area	Production	Yield	Area	Production	Yield	Area	Production	Yield
Oil seed	2.55	1.67	-0.89	0.56	1.95	1.40	2.02	2.73	0.69
Potato	3.25	9.32	6.33	4.41	7.81	3.40	3.99	6.96	3.17
Sugarcane	8.20	13.38	5.72	5.06	6.43	1.42	5.76	7.57	2.34
Tobacco	-3.53	2.52	5.93	-7.05	-6.32	1.03	-4.54	-2.50	1.94
Cash Crops	**3.21**	**11.17**	**8.31**	**2.34**	**6.73**	**4.46**	**3.00**	**7.11**	**4.45**

Source: Calculations based on SINA, CBS data, 2003

Oil Seeds: Among the cash crops oilseeds (mainly mustard) are the most important in terms of cropped area under cash crop as well as total cropped area. It represents around 3.8% of the total cropped area and 55.6% of the cash crop area (2002/3). The production growth rate for the period 1984/85 - 2002/03 was 2.73%, which is primarily as a result of area expansion (area growth rate is 2.02%). The production growth in the period-1 was mainly due to growth in area, whereas its yield showed negative growth. In the period-2 the production growth was mainly due to increased productivity.

Potato: The growth rate of potato production has been even higher compared to oilseeds. In the perios-1 it was as high as 9.32 and improvement in the productivity was the main reason for the increased production growth of potato crop. However significant growth was noticed in the areas too (3.25percent). In the period-2 the growth rate was slowed down but still high. During this period the production of potato grew at the rate of 7.81% in average. The overall growth of production during the period 1984/85 - 2002/03 was 6.96. Potato occupies in total 29% of the area under the cash crops and 2% of the total cropped area of Nepal.

Tobacco: Tobacco demonstrates significant negative growth in production. The production growth rate was 2.52% in the first period. However, during the same period a substantial negative growth was observed in its production. In the period-2 the production and area declined at the rate of -6.32 and -7.05 respectively. Tobacco occupies about 1% of the cash crop area.

Sugarcane: Sugarcane has the highest growth rate for both area and production. In the period-1 the production growth rate was as high as 13.38 accompanied by high area and yield growth. In the second period the production growth rate was slowed down to 6.43%. However, the yield remains quite low. Sugarcane occupies around 15 to 4% of the cash crop area.

6.5.3 Trends in Pulses

Pulses occupy about 7.2% of the total cropped area. Pulses are one of the main sources of protein in the diet of the population. Together with rice, pulses are also a particularly important staple food. There are various types of pulses grown and consumed in Nepal. However, lentil is the main crop in terms of production and export.

The overall production growth performance has been quite good at 3.69%. However it declined from 4.59% (period-1) to 2.93% (period-2). The yields are very low.

Table 6.22: Growth Rates of Pulses Crops at Different Periods of Time

Crops	Period I (1984/1992)			Period II (1993/2003)			Overall		
	Area	Production	Yield	Area	Production	Yield	Area	Production	Yield
Lentils	10.74	10.54	-0.28	1.85	4.25	2.38	2.95	5.39	2.55
Others	0.37	-1.08	-1.35	-2.90	1.23	3.97	-1.41	1.65	3.08
Pulses	**5.29**	**4.59**	**-0.71**	**-0.31**	**2.93**	**3.21**	**0.89**	**3.69**	**2.87**

Source: Calculations based on SINA, CBS data, 2003

Lentils: Lentils are the most important pulses covering around 58.9% of the area under pulses. The production performance has been good. The growth rate of production for the entire period is about 5.39%. Yield accounts for about 46.4% of the growth. During the period-1 the production growth rate was unexpectedly very high and high growth of area was the only source of production growth. During this period the yield had negative growth rate. Whereas in the period-2 the production growth rate was slowed down to 4.25% and yield improvement was the main source of the growth (56.3%).

Other Pulses: Chickpea, pigeon pea, black gram, grass pea, horse gram and soybeans area some of the other pulses grown in Nepal covering around 41.1% of the pulses area. The growth has been 1.65% for production and 3.08% for yield during the period. However the growth rate for the area was negative during the same period (-1.41%).

6.5.4 Trends in Fruit Production

The coverage of fruit crops is very nominal, however, the potentiality of these crops has been considered to be very high. Fruits cover about 1.2% of the total area (2002/03). Fruits are subdivided into citrus crops like oranges, winter fruits like apples, pears, walnuts, peaches, and plums, and summer fruits like mangoes, banana, and guava. The characteristics and performance of these different types of fruits vary. For the purpose of this study analysis has been made for citrus, winter and summer fruits. Furthermore the production data were not available for the period-1 and hence the analysis has been performed only for the period-2.

Table 6.23: Growth Rates of Fruits and Vegetables at Different Periods of Time

Crops	Period II (1993/2003)		
	Area	Production	Yield
Citrus	5.72	6.51	0.81
Winter	2.64	2.68	0.05
Summer	2.47	2.42	-0.09
Fruits	**3.27**	**3.46**	**0.16**
Vegetables	**1.76**	**4.72**	**2.94**
Note: Figures for Period I (1984/1992) not available			

Source: Calculations based on SINA, CBS data, 2003

Citrus: Citrus is one of the most important income generating crops for the farmers of mid-hills. The citrus crops considered in this analysis include oranges, sweet oranges, limes, and lemons. These fruit crops all together occupy about 26.1% of the total fruit crops area. During the period of 1993/94-2002/03 the production growth had been very high accounting for about 6.51%. However the 88% of the production growth was brought about by increase in production area. The growth of yield is nominal.

Winter Fruits: The winter fruits occupy about 21.2 of the total fruits areas. For the purpose of this study only fruiting area has been considered and the crops like apples, pears, walnuts, peaches, plums, apricots, persimmons, pomegranates, and almonds have been included as winter fruits. The production grew at the rate of 2.68% and the growth was exclusively the result of increased area coverage of the crops.

Summer Fruits: The summer fruits occupy the largest portion of the area under fruits (52.7%). Mango is by far the most important summer fruit, covering around 50% of total summer fruit area and it is one of the most commercialized fruit crops of the eastern Terai. Besides mango, fruits like banana, guava, papaya, jackfruit, pineapple, litchi, areca nut, and coconut are the other fruit crops included in growth calculations. The overall performance of these fruit crops has been modest over the period both in terms of production and area growth, however, the growth in yield is negative (-0.09). Banana is the other important crop, which covers about 11% of the total fruit area. The performance of the other fruit crops has been quite modest.

6.5.5 Trends In Vegetable Production

The area coverage of the vegetables is about 3.8% of the total cultivated area. Vegetables are the most important crops after cereals, pulses and oilseeds. The performance of these crops has been quite satisfactory during the period 1993/94-2002/03. The production growth rate is 4.72% and significant part of this growth has been brought by growth in yields.

6.6 COMPETITIVENESS IN EXPORT MARKETS

6.6.1 Comparative Advantage & Competitiveness of Major Exportable Commodities

The trading of agricultural products with other countries depends not only on the availability of the products in the country but it is also influenced by the exposure of the

products to the foreign markets. Generally, as the agricultural products are bulky, their trade with the foreign markets is very much influenced by the distance and the cost of transportation and most of the agricultural products are traded with the neighboring or adjacent countries. But there are some specialized agricultural products that are traded in the distant markets as well even if they are bulky. Description on the major exportable agricultural products that are potential for export to such countries is presented in the following subsections:

Pulses

Lentil as a major exportable agricultural product has been a regular source of foreign exchange earnings for Nepal. She exports both whole and split lentils. The cultivation of lentil has been increasing because of its promising potentiality at home as well as abroad. Among other pulses, Nepali lentils have a greater demand in the international markets. Bangladesh, Singapore, Sri Lanka, Germany, Korea, UK, Indonesia, are some of its major export markets.

Lentil is an important pulse crop that covers about 45 to 55% of the total area under the pulse crop. In 2002/03 total area under cultivation lentil in Nepal was 183,294 hectares. The Central and Mid Western Development Region of Nepal are considered to be the most potential area for the production of lentils. The production of lentils in Nepal in the fiscal year 2002/03 is estimated around 149,963 metric tons. The share of Eastern, Central, and Western, Mid-Western and Far Western development Regions for its total production in the fiscal year 2002/03 was 10.27%, 48.23%, 6.44%, 23.97% and 11.03%, respectively.

The export of Nepali lentils to overseas countries maintained an upward trend until 1997/98. However, the export has declined due to unfavorable weather conditions. It was able to occupy 4th position in the total overseas export products' list in the year 1995/96. The volume of export according to 1997/1998 data was 30567 metric tons. However, it recorded a sharp decline in the next FY and was again reduced to 2365 metric ton in 1999/2000.

Table 6.24: Dynamics of Overseas Export of Lentil from Nepal

Fiscal Year	Quantity (metric tons.)	Value (NRs. '000)
1995/96	10936	375169
1996/97	15443	96845
1997/98	30567	869568
1998/99	28509	913413
1999/00	2365	77675

Spices

Varieties of spices are traditionally grown in Nepal. Nepal offers a number of spices such as dry and fresh ginger, large cardamom, turmeric, cinnamon both leaf and barks, chillies etc. Spices are famous for flavoring food throughout the world. Mostly spices are used in domestic culinary as well as food industry. They are also widely used in medicines and bakeries. Spices are the major export product of Nepal. India has been traditional market

for Nepali spices. They are exported to India, Pakistan, Singapore, Germany, Taiwan and so on, directly or through intermediary traders.

Large Cardamom

Large cardamom is one of the major cash crops of the eastern hilly region of Nepal. In general, most of the cardamom produced in Nepal is exported to India from where it is re-exported to other countries. However in 2002/03 Nepali cardamom worth NRs. 595,600,000 was exported to the third countries. The potential markets for Nepali large cardamom are Bangladesh, Pakistan, Qatar and Saudi Arabia.

Table 6.25: Nepal's Export of Cardamom

Year	Quantity	Value (in million NRs.)
1996/97	3427	217
1997/98	3419	249.3
1998/99	NA	201.4
2002/03	NA	595.6

Ginger

In Nepal, ginger has been under cultivation for culinary and medicinal purpose. But after the establishment of this crop as a cash commodity, it is being cultivated for the commercial purposes.

Ginger can be grown successfully from Terai to mid-hills regions (1000 m above the mean sea level). But it is the major cash crop for the mid-hills farmers of Nepal. Nepali farmer basically trade five categories of ginger viz. fresh, dried, smoked, mother rhizome and seed ginger. Among these, fresh and dried ginger are the most popular products. Major portion of the production (around 60% of the total production) is marketed to India. The mid-hills region, which is not very much suitable for the cultivation of cereal crops, can be utilized for the ginger cultivation.

The farmers of the eastern hills trade ginger in fresh form. Their fresh produce is exported to India through the eastern border with India mainly from Naxalbari and Jogbani points. Whereas the farmers of western mid hills trade both forms of ginger fresh as well as dried through Sunauli, Mahendranagar, Krishnanagar and Nepalgunj border points.

Out of the total production of ginger in Nepal, more than 60% is exported to India and the remaining volume is utilized domestically for the culinary purposes and retained as seed for the next year. In the FY 2002/03 ginger was grown in 11480 ha and 140056 metric tons was produced.

From the focus group discussions it was found that, Nepali ginger is competitive in the Indian market due to the high quality rather than price. Most part of the ginger is exported to India in the form of fresh ginger and processing is uncommon except poor quality dry (sun and smoke dried) ginger. The quality of Nepalese ginger is rated quite good but due to poor post-harvest handling it fetches lower price in India. Supports are needed to selection of varieties suitable for processing and fresh consumption. Similarly post

harvest handling and marketing (marketing channel, information flow, appropriate packaging and transportation) are the key elements towards further development of ginger cultivation in Nepal

Fruits and Vegetables

Off Season Vegetables

Considering the agro-climatic diversity of Nepal, it has great potentials for the production and marketing of high value off-season vegetables practically throughout the year. APP has policy priority of developing horticultural crops particularly in the hills.

Currently vegetable production in Nepal is targeted primarily to fulfill the household demand and the demand of local markets (export substitution). However, focus group discussions indicate that, some vegetable-production-pocket-areas are producing for the export to Indian market. In these areas, impressive growth rates were noted in vegetable cultivation.

Similarly, hybrid tomato, capsicum, broccoli, cauliflower, cabbage, green peas, okra, carrot and cucumber are some of the off-season vegetables widely grown in Nepal at the commercial scale.

Following the opening of land route from Nepal to Bangladesh via Kakarvitta-Fulbari (India) – Bangladesh in 1997/98, AEC formulated programme for the export of Nepali high value products to Bangladesh via this overland route. To further expedite the export, the Export Promotion Committee of the Ministry of Commerce provided market development assistance promotional funds to AEC. Subsequently, AEC assisted the local exporters to link up with local farmers for production of buyer specific hybrid tomato. The production was accomplished through group mobilization and extension support. As a start up case, Nepali exporters exported about 5 MT worth of US$ 1200 of hybrid tomatoes to Bangladesh. There is a tremendous potentiality of exporting hybrid tomato especially during off-season in Bangladesh and along the Northern Border of Indian Markets (AEC, 2001)

Fruits

Citrus, apple, mango, pineapple, litchi and banana are the most commonly grown commercial fruit crops in Nepal. Among these fruits, Nepali apples and oranges are main produces. The popular varieties of apples found in Nepal are Royal delicious, Red delicious, Golden delicious, among others.

By the late 1998s and early 1999s, for the first time, small quantities of fruits that included apple and orange, entered the markets of Bangladesh. Three Nepali exporters and three Bangladeshi importers were involved in the transactions. The volume of apples and oranges exported during that period was 7.14 MT, 14.4 MT and worth 5708 and 3547 US$, respectively. In this initial venture, AEC played an active role in training the personnel involved in export procedures; in pricing, grading, packaging and fulfilling all export formalities. In FY 1999/2000 traders of Jhapa exported four trucks of oranges worth US$ 4500 to Bangladesh with promotional support from the Export Promotion

Committee. As a demonstration effects of last year's export promotion activities another exporter of Itahari, also exported 5 trucks of oranges worth of approximately US$ 4855 to Bangladesh. There is an opportunity for the export of Nepali oranges to Bangladeshi markets provided the tariff duty in Bangladesh is reduced.

Fruits and Vegetables Trend in International Market

Fruits and vegetables are important commodities for developing countries seeking to diversify exports. The value of world fruit and vegetable exports was US$ 34.6 billion in 2001. Fruits accounted for almost 60% and vegetables over 40%. The main fruits were citrus (21%), bananas (19%). The value of trade in tropical fruits (mangoes, papayas, pineapples and others) is slightly under US$ 1 billion (5%). The most traded vegetables are tomatoes and onions.

Developing countries account for virtually all exports of bananas and tropical fruits, and about half the trade in citrus. However, the participation of the least developed countries (LDCs) in trade is very low: during 1997-2001 their share in fruit was 0.5%, and in vegetables, 0.8%.

Government intervention in fruits and vegetables tends to be lower than in other agricultural sectors. Generally, industrialized countries do not subsidize horticultural producers directly, and there are no price support mechanisms. There are indirect supports through processing subsidies (e.g. for citrus in the EU), provisions of phytosanitary services and support to generic advertisement and export promotion programs (in the USA and the EU).

Phytosanitary controls imposed by importing countries are critical for developing countries exporting fresh fruit and vegetables. These controls are particularly stringent in the USA, Australia and Japan. Between 1995 and 2000, nearly 270 sanitary and phytosanitary (SPS) measures were introduced against imports of fresh fruits and vegetables worldwide. A major hindrance to fresh produce trade is the lack of harmonized technical standards and treatments for exports. Developing countries exporting tropical fruits face serious challenges in meeting the phytosanitary regulations of importing countries due to the phasing out of methyl bromide. Among the world production of tropical fruit developing countries account 98%. Mango is the dominant variety produced worldwide, followed by pineapples, papayas and avocados.

Opportunities for Nepal

Nepal possesses great opportunity in the production and marketing of fresh vegetables and fruits. Off-season vegetables should be considered as one of the most promising export commodities targeting the big Indian cities like Delhi, Lucknow, Kolkata, Kanpur and Siligudhi. Nepal has traditional trade linkage with these cities and can use this linkage for the promotion of Nepali off-season products. For this purpose, Nepal should build its capacity both in terms of production, post harvest management and marketing networks. Special emphasis should be given to address the SPS requirements of Indian central and state government. Establishment of collection centers, meaningful shortening of marketing chain, development of marketing infrastructures including transportation.

Tea and Coffee

Tea is an upcoming export item of Nepal. Tea has been cultivated in Nepal since more than a century. Orthodox and CTC are major varieties of tea grown in Nepal. Illam tea, which is famous as high altitude grown orthodox tea, is popular among the tea specialists. The major export markets of Nepali tea are Germany, Japan, France, Italy, Hong Kong, U.K., Switzerland, Australia, Netherlands and USA. The medicated and herbal tea of Nepal has been very popular in these markets. Jhapa, Ilam, Dhankuta, Panchthar and Terathum are the major tea producing districts of Nepal. The total area under tea is 12643 in 2002/03 (SINA, 2003) with the total production of 8198 metric ton.

International Trend: Preliminary estimates indicate that world tea production in 2002 reached 3 million tons, a slight reduction of 1% from the record output reached in 2001. The 5% increase in production in Sri Lanka due to favorable weather was sufficient to offset declines in India and Kenya. Output in India is estimated to have fallen by 3% due to inadequate monsoon rains and financial difficulties faced by growers because of low prices and increased cost of production. Similarly, reduced rainfall also affected output in Kenya, while output in China, the world's largest green tea producing country, is likely to maintain output at 2001 levels.

Table 6.26: Tea Production Major Tea Producing Countries ('000 tons)

Countries	1996-98 Average	1999	2000	2001	2002*
World	2811	2897	2959	3033	3002
Bangladesh	54	47	52	57	55
China	647	698	700	721	721
India	820	806	846	854	826
Indonesia	162	165	159	159	154
Sri Lanka	272	284	308	295	310
Kenya	257	249	236	296	287
Malawi	41	38	42	37	39
Tanzania	22	23	24	25	25
Argentina	53	57	57	57	57
Japan	88	89	89	89	89
Nepal	-	-	6.6	-	8.2

Source: FAO, 2003

World tea export approaches 1.4 million tons in 2001, a 5% increase compared to quantities shipped in 2000. Exports from both Africa and the Far East increased substantially. Exports increased in China and Sri Lanka by 10% and 5%, respectively offsetting the 10% decline in shipments from India.

Pakistan is a big tea importing country and Kenya is the main exporter to the Pakistani market. If we established trade linkages with Pakistan we will get big market opportunity with mutual benefits.

Table 6.27: World Market on Tea ('000 tons)

Export and Import	1996-98 Average	1999	2000	2001
Exports				
World	1208	1271	1311	1374
Bangladesh	25	15	18	13
China	200	203	231	253
India	190	210	201	180
Indonesia	79	98	106	100
Sri Lanka	252	264	281	295
Kenya	235	242	207	251
Malawi	42	43	38	38
Tanzania	20	21	23	22
Uganda	20	22	26	30
Zimbabwe	12	15	17	17
Argentina	52	52	50	56
Nepal	-	-	-	-
Imports (exuding re-exports)				
World	1180	1225	1251	1293
EC (15)	227	215	208	216
CIS 2	193	214	212	217
United States	89	93	88	97
Australia	16	14	15	15
Japan	49	49	58	60
Iran	29	38	47	40
Syria	18	20	20	22
Egypt	72	73	63	56
Morocco	35	35	42	38
Pakistan	108	108	111	107

Source: FAO, 2003

Coffee

Along with tea, coffee is also emerging as a potential export product of Nepal. Coffee is cultivated in some pocket areas of middle part of Nepal such as Gulmi, Palpa, Syanja, Lalitpur and Kavre districts. Conducive agro-climatic environment for coffee has encouraged the farmers in cultivation of coffee. It can be cultivated in barren and steep lands. It is high valued commercial crop having promising market potentialities at home and abroad. Japan and The Netherlands are the existing export markets for Nepali organic coffee. Currently the production capacity of Nepal is very low and the post harvest skill and knowledge is limited. International coffee market is very competitive and highly quality sensitive.

Organic Food

Since the mid-1990s, the market for organic foods has been expanding rapidly and retail sales will probably exceed the value of US$ 23 billion in 2003. In Asia, it is estimated that total retail sales will reach some US$450 million in 2003. While most of these sales presently take place in Japan, other countries have witnessed a rapid expansion of their organic market. These countries include China, India, the Republic of Korea and Singapore. Organic production has risen steadily across Asian countries in recent years,

and the total area under organic management was estimated at 600 000 ha in 2003. The countries with the largest organic area are China, India and Indonesia. To date, China and Japan have established official organic certification bodies, and China, India, Malaysia, The Philippines and Thailand are in the process of developing organic legislation.

It is estimated that total sales of organic fruit and vegetables will approach US$ 5 billion in the developed countries in 2003. The main markets are the United States, followed by Germany, the United Kingdom, Italy, France, Switzerland and Japan. In many countries, fruits and vegetables rank first in total organic sales. The market surveys indicate fast growth in sales of organic fruits and vegetables in most developed countries.

However, the organic sector is still having niche in the total food sector. Market shares of organic foods in most developed countries are around 2% of the total food sales. Somewhat higher figures are found in some West European countries (e.g. Austria, Denmark, and Switzerland) with estimated organic shares close to 3%.

The share of organic sales in the fruit and vegetable sector is somewhat higher than the share of organic sales in total food sales. In most developed countries, organic shares in fresh fruit sales are estimated at about 3 to 5%, whereas for vegetable sales the organic shares are estimated to be up to 10% in Switzerland and the United Kingdom. Organic fruits and vegetables offer some opportunities for developing countries. Countries like Nepal need advice on standards, certification, leveling and information on the potentials of organic agriculture to contribute to environmental quality, income generation and food security. Informed decision making on organic agriculture, within the range of sustainable agriculture options, would allow governments and the private sector to direct research and extension efforts, and tap national and international market opportunities.

Floricultural Products

Floricultural products have been the emerging export products of Nepal. Nepal's varied climatic conditions and soil types offer a wide potentiality for cultivation of all types of floricultural plants all over the year. Besides, other hundreds of varieties of flowers, 90 genera and 350 species of orchid are available in Nepal. Nepal is exporting cut flower, flower bulbs and seeds. The major export markets are in India, Japan, Pakistan and Qatar. There are great potentialities for the expansion of export of floricultural products from Nepal.

Medicinal Herbs and Essential Oils

The medicinal herbs and essential oils are well-known export product of Nepal. Medicinal and aromatic plants are its important natural resources, which are found widely in the forests and Himalayan ranges. In Nepal these plants are being used for traditional healing purposes for centuries. Ayurvedic drugs are made directly from these medicinal herbs.

The essential oils extracted from different medicinal plants are widely used as raw material for producing various consumer products such as cosmetics, perfumery, medicines etc. Various plant-based essential oils are produced and exported from Nepal. Citronella oil, palmerosa oil, sugandha kokila, lemon grass oil, lichen extracts are some of

the prominent essential oils and extracts commonly produced in Nepal. The major export markets for these products are Germany, Japan, Pakistan, Italy, France, USA, UAE, U.K., Switzerland, Sweden and Australia.

Honey

Honey is emerging as an export product of Nepal. It has a growing export market, as honey is being used for food industry and in pharmaceutical sector. The cosmetic manufacturers are also using it as an ingredient for soaps and shampoo. The natural honey of Nepal especially produced in the mountain regions is very famous for its exotic taste. The major export market of honey is Norway. But the export of honey to EU market is impeded by the lack of quality certification agency in Nepal.

Nepalese Paper and Paper Products

The Nepalese paper and paper products have markets worldwide. The Nepalese papers are made from lokta or dayshing (daphne cannabira) plants. The unique feature of Nepalese paper is its moth resistance quality. Besides paper, a wide variety of products made from it like postcards, writing pads and papers, wood block prints, calendars, gift-wrap, lampshades, etc. are exported from Nepal. The major markets are USA, Japan, Canada and some European countries

6.6.2 Price and Quality Competitiveness Analysis of Nepalese and Indian Agricultural Produces

Competitiveness of the agricultural products emerges from two fronts (a) price competitiveness and (b) quality competitiveness. Using following formula can assess the price competitiveness of a domestic product in export market:

$$\textbf{Price competitiveness} = \frac{\textit{cif price of import of the commodity X nominal exchange rate}}{\textit{fob price of export of the commodity}}$$

No such a statistical indicator is available to compare the quality competitiveness of the agricultural products in the international market.

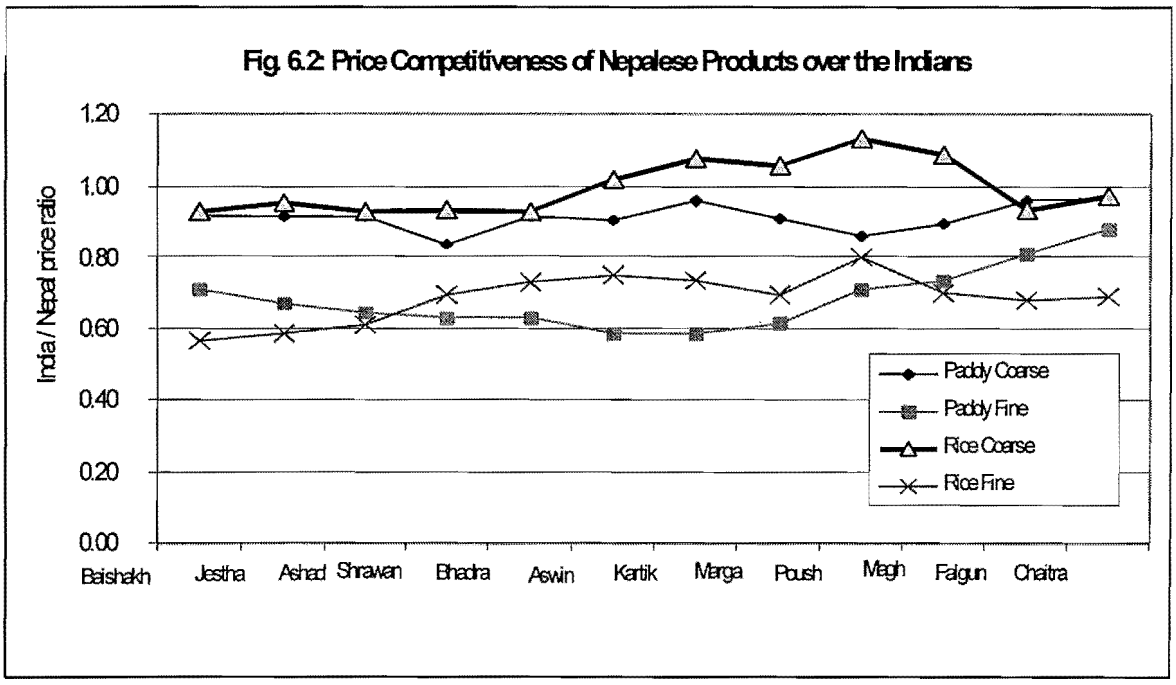
6.6.2.1 Price Competitiveness

Over one thousand tariff lines of agricultural products are traded globally. Nepal exports about 38 agricultural products most of them to India and some to overseas countries. ***Annex-3*** presents the exported agricultural commodities and export values with destination. The table shows that India is a very important market for Nepali agricultural products.

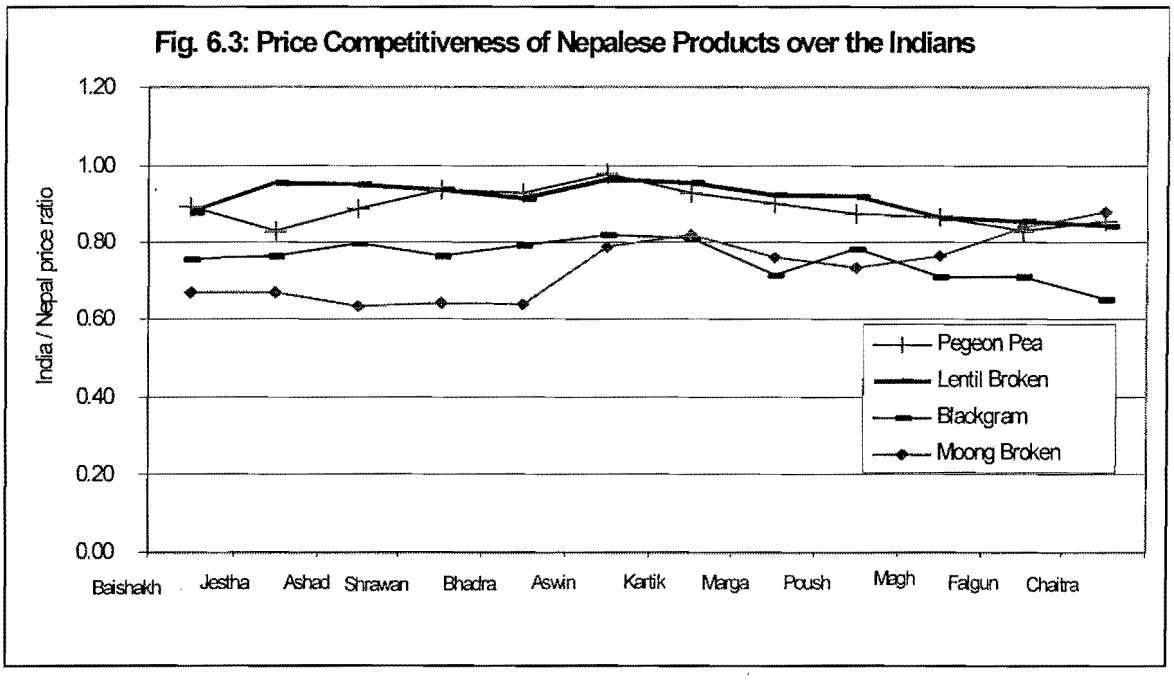
For comparing price competitiveness with Indian products, wholesale price of Indian products at the border markets of India can be taken as cif price of the imports. Similarly, wholesale price of Nepali products in border markets of Nepal can be taken as fob price of Nepal.

On the basis of these assumptions, the price competitiveness of major commodities is analyzed using the price data reported by the Market Development Directorate of Department of Agriculture. The results are presented in following charts.

Fog. 6.2 shows that coarse rice is price competitive in the Indian market during the months of Aswin to Magh. This is not due to the rise in the price in India. This is because wholesale price of coarse rice during the harvesting season in Nepal goes down whereas the same in India does not decrease much. This may be due to the effect of agricultural price policy of India that provides price security to the farmers when the price falls below the minimum price declared.

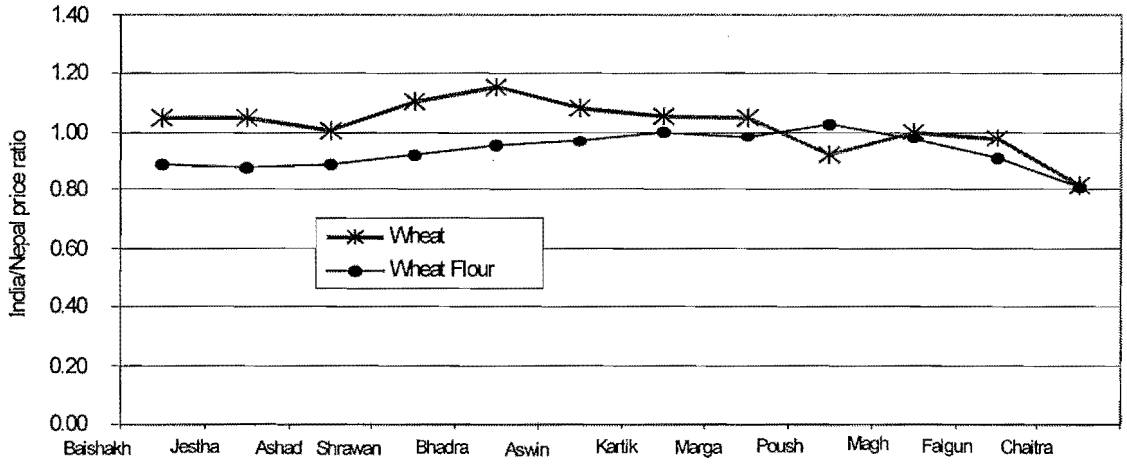


The fine rice is not appearing to be price competitive. It is generally believed that lentil is a competitive product. But, the analysis shows that none of the pulses of Nepal are price competitive (**Fig. 6.3**).



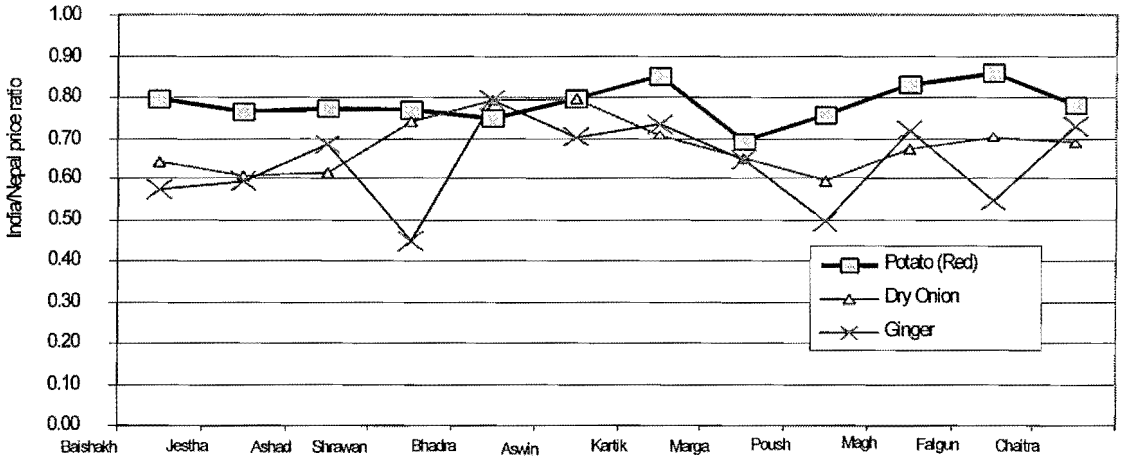
Surprisingly, wheat is found to be price competitive (**Fig. 6.4**). It is competitive throughout the year except in Falgun and Chaitra, the harvesting period

Fig. 6.4: Price Competitiveness of Nepalese Products over the Indians



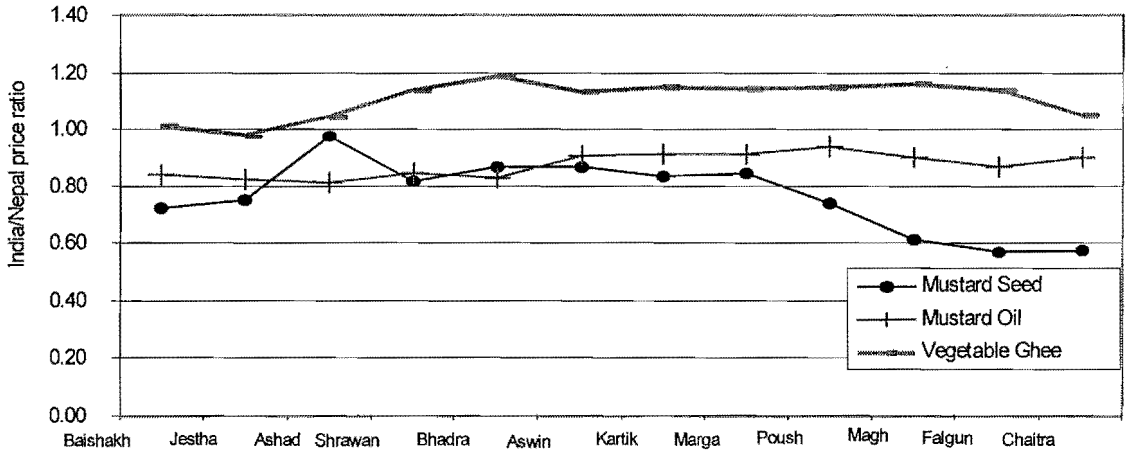
Nepal is not price competitive in potato and onion (**Fig. 6.5**). These products are produced in India in bulk and our scale of production is very small. Against the widely believed notion that ginger is our competitive product the analysis shows that the fresh ginger is not price competitive. This may be due to discrepancy in the wholesale price of ginger reported from the domestic market and the actual price received by the farmers. In fact, only a few traders are involved in ginger export and the ginger market is far from the perfect. Price data of Indian market is not reported to analyze the price competitiveness for the products like dry ginger and cardamom.

Fig. 6.5: Price Competitiveness of Nepalese Products over the Indians



Vegetable ghee is found to be price competitive to Indian market. But Nepal is price competitive neither in mustard seed nor in mustard oil (**Fig. 6.6**).

Fig. 6.6: Price Competitiveness of Nepalese Products over the Indians



It would be interesting to compare the price competitiveness of jute and jute products, cardamom, dried ginger, vegetables and fruits. But, comparable price data are not available for such products. It can be concluded that barring a few products, Nepali agriculture is not price competitive with the Indian products.

6.6.3 Tariff & Non-tariff Policies for Nepalese Agricultural Products in Potential Export Markets

Non-tariff measures can be defined as measures other than import tariffs, restricting market access to foreign goods. The role is thus similar to that of tariff, i.e. import restriction. But there are certain inherent problems associated with the imposition of Non-Tariff Measures (NTMs), which have led the multilateral trading system (GATT/WTO) allowing protection against imports through its 'tariff only' regime and restricting the use of NTMs to certain specific circumstances when non-trade needs arise.

Distortions are created by tariffs as well. Moreover, the distortions get created in both exporting and the importing countries. These distortions include price and quantity effects on trade flows on domestic production, employment, income distribution and welfare. Import tariff increases the price of the imported item in the domestic market. There are certain NTMs which more or less work in a similar way. NTMs like import surcharge, anti-dumping and countervailing duties increase the landed price of imports, as does tariff. Thus, the impact of these types of NTMs can be analyzed in the tariffs framework. The duties can be simply added to the nominal tariff rates to estimate the combined level of restrictions. Such measures include marking, labeling, and packaging requirements, adherence to technical standards as specified by Technical Barriers to Trade (TBT) Agreement of WTO. The other major form of NTMs is the Tariff Rate Quota (TRQ).

In spite of certain extent of similarity of tariff and NTMs in terms of distortion and impact, there are two basic differences. In most cases, tariffs are imposed on Most Favored Nation (MFN) basis while NTMs can be imposed on a case-by-case basis. Secondly, tariff

is a transparent instrument while NTMs are mostly opaque and operates through a maze of administrative measures.

As most of the products are traded with India and Bangladesh, these countries have been using tariff and non-tariff measures to protect their markets. In the case of primary products, India does not levy tariffs on the primary products but levies 25% tax on the import of tea from Nepal. India generally takes recourse to the non-tariff measures to control imports from Nepal. Quarantine checks and food standard analysis are the major NTMs applied by India.

6.6.4 Pattern of Agriculture Trade and Trends in Product and Market Diversification

In spite of its importance in the national economy, agriculture has a limited importance in terms of trade. On average, over the 1990s, agricultural exports represented only 3.4% of agricultural GDP, whereas total exports represented 10.31% of total GDP, an indication of relatively little trade orientation of Nepali agriculture. For agricultural imports the situation is similar. Agricultural imports are 7.7% of agricultural GDP on average over the period of the 1990s. Similarly, to agricultural exports, agricultural imports share as a percentage of GDP has increased over the course of the years in the 1990s. The share of agricultural imports in total imports has been rather constant, around a value of 11.6%. Agricultural exports are less than agricultural imports for all the periods; however, **Table 2.4** shows that agricultural exports are growing faster than agricultural imports i.e. 20.8 versus 16.4%. It is improving the ratio of the agricultural exports to agricultural imports from an average value of 37.5% in the sub-period 1990/91-1994/95 to 50% in the sub-period 1995/96-1999/2000.

India is the major trade partner of Nepal, absorbing about 30% of its exports and providing about 33% of imports during the period 1995/96-1999/00. In the case of agricultural trade, the linkages with India are even closer. Agricultural exports to India were about 72% of total agricultural exports and imports from India were 55% of total imports during the 1990s. Over the course of the decade, the trade position with India has improved, as witnessed by the fact that agricultural exports to India as a share of total agricultural exports have increased to 76% while the agricultural imports from India as a share of total agricultural imports has declined almost 50% over the two 5-year sub-periods of the decade.

6.6.5 Agricultural Trade Policy and Procedures in Nepal

6.6.5.1 Rate of Trade in Nepal

In the economic development of Nepal trade has played an important role. It has been supplying essential goods needed for domestic consumption, raw materials for industries, markets for the exportable products, technology and know how needed for all the sectors, and financial resources for correcting balance of payments of the country. In this context, it is accepted in Nepal that there is a need for the expansion of trade. Hence, liberalized trade policy has been pushed by the government. However, the trade sector is facing a problem of deficit due to more increase in imports and less increase in exports. Nepal's

trade transactions with her neighboring countries further deteriorated due to continuous increase in imports from the neighboring countries than her exports to them. Therefore the present challenge of Nepal's trade is the diversification of her exports by products as well as by countries.

The long-term vision adopted in the Tenth Plan document was to integrate the commerce sector to the globalization process and it is accepted that the trade sector would be made competitive and market-oriented to develop it as a strong foundation for the economy. The major objective of trade sector adopted in the Tenth Plan is to integrate import to industrial development and to promote export so as to increase the overall contribution of the trade sector to the GDP.

6.6.5.2 Problems and Challenges of Nepalese Trade

The trade sector of Nepal is facing the following problems and challenges that have impeded its development:

- Concentration of export trade on a few items and destinations
- Dependence on the import for raw materials
- Weak forward and backward linkage among the items in export list
- Widening annual trade deficit
- Failure to fully use the alternative transit route via Kakarbhitta-Fulbari-Banglaband to expand foreign trade
- Failure to expand trade with China despite huge business potential

These problems and challenges have adversely affected the competitiveness of the country's foreign trade.

6.6.5.3 Features of the Trade Policy of Nepal

The general export policy of Nepal has been influencing the agriculture export policy to a large extent. From the beginning of the1990s the government has adopted liberal macroeconomic policy that also led to influence the agriculture sector to follow the same approach. Therefore the assessment of general export policy is equally important to understand the export policy in agriculture sector of Nepal. In Nepal there has been a move to make its trade more liberal so as to transform it into an engine of growth and this has also influenced the agriculture sector. Nepali agriculture has been playing a dual role. First it has to meet the food requirement of the country and this role is more social and humanitarian. But at the same time it is also acting as an important sector for the development of various types of business activities. Because of this dualistic role agriculture in Nepal needs to have a good tradeoff between the two.

The objectives of the present trade policy of Nepal are:

- To enhance the contributions of trade sector to national economy by promoting internal and international trade with the increased participation of private sector through the creation of an open and liberal atmosphere.
- To diversify trade by identifying, developing and producing new exportable products through the promotion of backward linkages for making export trade competitive and sustainable.

- To expand trade on a sustained basis through gradual reduction in trade imbalances.
- To co-ordinate trade with other sectors by expanding employment-oriented trade.

The current trade policy takes into consideration the following elements:

- Increased active role of the private sector; but the public sector to remain as a catalyst agent to facilitate the expansion of private sector in the trade.
- Improvement in balance of payments position by promoting exports to increase foreign exchange earnings as well as by fulfilling internal demandsof economic and quality products by adopting a liberal and dynamic trade policy.
- Production of quality goods and services both for internal consumption as well as for exports.
- Diversification of trade in terms of the range of commodities and the country destinations.
- Adoption of liberal procedures for encouraging interactions between trade and industry for sustained export promotion and for fulfillment of internal demands through increased domestic production.
- Modernization of management and technology on promoting markets and attracting direct foreign investment in order to identify and develop new products as well as raise the production and quality of the traditional commodities.
- Gradual privatization of the public sector trading corporations taking into considerations the development and efficiency of the private sector.

6.6.5.4 Agriculture Trade Policy

The trade of agricultural products is also influenced by the general trade policy of the government. Agriculture produces acted as important items of exports in the past. Government policy was directed to promote the trade of non-traditional goods; but the export of grains were restricted or not as per the requirements of domestic markets. Endeavors were made to export agricultural products by processing them. Some of such products are 'Jute goods, tea, biscuits, and noodles. But still majority of such goods are exported in semi-processed forms.

Since agriculture produces food items needed for domestic consumption, and raw materials for industries, the trading of such products is very much related to the strategic and socio-political strengths of the country. Therefore, special consideration is to be given while adopting trade policy for agricultural goods. The general policies on trade do not provide appropriate measures to make agricultural products more competitive. A need is felt to reform Nepal's trade policy so as to make its agricultural products more competitive.

CHAPTER VII: KEY ISSUES RELATED TO COMPETITIVENESS OF NEPALI AGRICULTURE PRODUCES

From the analysis of the competitiveness of Nepali agricultural produces in the previous chapters many issues are identified. Among them key the issues related to pre-production, production, post-production and export/import phases are summarized in this chapter.

7.1 PRE-PRODUCTION PHASE

7.1.1 Insufficient Physical Infrastructure

Physical infrastructure as road, irrigation, telephone, and electricity are not adequately available for the rural farmers. Due to insufficient infrastructure and inadequate utilization of available infrastructure, production and transaction cost of Nepali agricultural produces is high and they are facing difficulties in the competitive market. Utilization of electricity in agricultural sector is nominal. Due to the lack of access road many produces are not able to reach the market on time (for example apple products of Jumla). Only 33% of the total cultivated land has irrigation facility out of which, Tarai alone represent 86% and hills and mountain areas have nominal irrigation facilities.

The database for the agricultural sector is not adequate and reliable for estimates and forecasting. Without access to market information they are heavily dependent on traders' information, which are not much reliable.

7.1.2 Gender Mainstreaming

Woman are playing vital role in the agriculture sector. Women's contribution to agriculture production is 60.5% and it is continuously increasing. However, welfare of the female farmers is not improved. On an average, women folks work 4 hours more than their male counterparts. They are engaged in agricultural sector with little agro-education and modern technical know-how.

Women's control over and access to agricultural inputs are very limited. Their ownership over agriculture land is hardly 4.4%. Male have great decision making role with regard to buying and selling of agriculture inputs and produces. Women have little access to institutional credit facilities.

7.1.3 Research and Extension

Functioning of quality extension and research system is the prerequisite for the increased competitiveness in the market by generating and providing not only technical but also economic and marketing know-how. Research and extension help to use the genetically improved seeds, as well as development of new varieties based on market demand. But in Nepal, such research and extension activities heavily depend on governmental institutions. Sensitization of the farming community with the environmental concerns,

balance and conjunctive use of bio-mass, organic and inorganic fertilizers and controlled use of agro-chemicals through integrated nutrients and pest management are not getting due priority.

Decentralized institutional changes are being made to make the extension system farmer-responsible, farmer-accountable and broad based. However, involvement of the co-operatives and the private sector in the agricultural research and extension activities are not getting due attention.

7.1.4 Zoning and Investment

Bulk production is necessary to get advantage from scale of economy. Nepali trading partners are involving themselves in the bulk production and producing cheap products. In Nepal, at present, there are many pocket areas where various types of exportable agricultural commodities are grown. But the government, the big trading houses and the financial institutions, do not properly support the agriculture sector. Investment in this sector is still minimum. It is imperative to develop agriculture zones based on products in various parts of the country to develop competitiveness of Nepali agricultural products and increase investment in the sector. Product specific zone development and encouragement of private sector or NGOs for timely supply of inputs and service delivery and link it with the market network could lead to increase in the volume of production. Farmers should be encouraged to change the cropping patterns and cultivating single commercial crops in one zone. For this purpose it is necessary to develop farmers' risk reduction measures, such as insurance.

7.1.5 Opportunities for Nepali Produces

Nepal has opportunity to export agricultural produces to the big markets of India and China specially Tibet. Open border with India and free flow of goods and service across the border of the two countries and due to unlimited convertibility of Nepali Rupees, Nepal has the benefit of market opportunity. The comparative advantages of the Nepali climatic and topographic situation can be helpful in developing the competitiveness of its products in the international markets. Therefore, there is need for the production of such products in Nepal that command good price in the markets of India, China and overseas. In most cases, the off-season vegetables and fruits do command better prices in such markets. Similarly, the market for organic foods has been expanding rapidly.

Nepal is already exporting relatively high value produces to India. She has opportunity to produce more high value crops and export to India. She can develop her vegetable markets in the Arab countries as well.

7.2 PRODUCTION PHASE

7.2.1 Inputs Supply

Growth of agricultural produces in the past has occurred to a great extent because of increase in inputs (labor, land, fertilizer and other elements). The steadiest growth is observed in irrigation. Growth in fertilizer was very good before liberalization. But, in the

earlier stages after removing the subsidy from the fertilizer, its uses have been decreased. Slight increase is observed in the cultivated land particularly, before liberalization. The least growing factor of production is the labour. The AGDP is increasing over the years with some minor cycles in it. The growth was over 5% before liberalization and after liberalization, it has come down to less than 3%.

Private sector is playing vital role in agricultural inputs supply. Timely availability of fertilizers could be made after liberalization. However, quality has been a questionable factor. From field study it is found that actual uses of fertilizers is more than the officially reported. Use of modern machinery in agriculture sector is minimal. Most of the agriculture inputs are imported from India. Adequate and timely supply of quality inputs such as seeds, plant protection chemicals, bio-pesticides, agricultural machinery and credit at reasonable rates to farmers need strengthening.

7.2.2 Land Management

Small size farmers' constitutes 68.63% of rural households of Nepal but account for only 30.47% of the total land. The medium and large farmers constitute 30.2% of rural households whereas they own 69.5% of the total land. Land of small farmers' is of comparatively low quality. Average size of land holding of Nepali agricultural households is about 0.95 ha. Due to the fragmented size of landholdings, it is difficult to use modern agricultural technology. There is no legal provision to develop lease markets for increasing the size of the holdings for giving private lands on lease for cultivation and agro-business.

7.2.3 Cropping Patterns

The slow growth in the non-agricultural activities in the country has made us dependent on agriculture. The increased labor force is to be absorbed by agriculture. It has created the problem of underemployment in agriculture. It has pressurized for the productivity of agriculture on the one hand and on the other hand it has pressurized the agriculture sector to produce more food. This sort of state in agriculture did not release land for the cultivation of other commercial crops. Therefore there is always a pressure both on the farmers and the government to have a choice between the production of food and other commercial products.

The cropping patterns have slightly changed after the adaptation of liberalization policies in 1984/85. In the 1990s, cropping patterns changed in such a way that paddy areas decreased, in contrast to maize and wheat areas to some extent. Fruits, vegetables and pulses areas increased. Similarly, spices, coffee, tea and honey had taken some place in the cropping patterns. Production of cash crops is increased and has become one of the main sources of income for the framers. However, most of the changes do not take place in commercial scale. They could not identify market opportunities that could encourage them for planning commercial crops.

In recent years, cropping intensity has been increased to some extent. The cropping pattern has been slightly changed from pure low-productivity subsistence farm to mixed agriculture, where part of the produces are grown for meeting the household demand for

food and part for sale to the commercial sector. However, the concept of specialized farming guided by the principles of the commercial market is not in practice. The further transition from mixed to widespread specialized farming may not always be desirable and such a transition may be difficult to achieve. Therefore the improvement of small-scale mixed farming practices is desirable because it will help in raising farm incomes and average yields and will also effectively absorb underutilized rural labor thus offering the immediate avenues towards the achievement of real pro-poor oriented rural development.

7.2.4 Risk Management

As in most traditional societies agriculture is not just an economic activity, it is a way of life in Nepal. Farmers are used to produce and consume food products, this practices did not release land for the cultivation of other commercial crops. Therefore there is always a pressure to have a choice between the production of food and other commercial products. Farmers have to depend on the food even by cultivating the marginal land. The marginal farmers do not like to replace the production of food by other crops with a fear that if the market is not available it will be difficult for them to survive. To avoid this risk thus try to retain the cultivation of food even if it is not economically viable. This has thwarted the commercialization of agriculture in Nepal.

There is no provision for farmers to have their crops insured from sowing of the crops to post-harvest operations, including market fluctuations in the prices of agricultural products. In order to transform from the traditional produces to commercial products risk management measure is a must. Because cropping pattern changes affecting the entire social, political and institutional structure of rural societies. Without such measure, commercialization of agricultural will either never be started or, will widen the gap between the few wealthy landowners and poor-rural framers.

7.2.5 Low TFP Growth Rate

On an aggregate, about 49% of the growth in AGDP is due to TFP and rest is due to factor inputs. Growth of AGDP in the past has occurred to a great extent because of increase in inputs (labor, land and other inputs). Increase in the factors of production increases the costs of production. This slow increase in the TFP is increasing the cost of production per unit making Nepali agricultural products less competitive to the international markets. Our growth of productivity is relatively small as compared to our trading partners, India and China. The growth rate or TFP was higher before liberalization than after it. However, the percentage share of TFP in AGDP has increased from 46% before liberalization to nearly 56% after liberalization. It indicates that there is a dire need for the efficient use of factors of production. Main cause of the low growth rate of TFP is the nominal application of science and technology in order to take advantage of market opportunities. Lack of adaptation of new technology such as higher-yielding seeds, better land management, irrigation and integrated pest management system TFP is low in Nepal.

Inadequate agricultural extension programs and fragmented land size also effect negatively to the TFP growth rate. A narrow focus on technology without due considerations to market opportunities and institutional mechanism to generate and

disseminate technology leads to ineffective use of scarce resources and marginal improvement in productivity.

7.2.6 Production Performance

Weak growth of cereals over the last decades and lack of diversification resulted in poor performance of agriculture sector as a whole and could not contribute to rapid and high economic growth as envisaged by the periodic plans.

Several cash and high value crops like potato, sugarcane, citrus, apple, vegetable, tea and cardamom had strong performance. However, diversification is barely noticeable at the aggregate level owing to small share in the total cropped area. The growth observed in the fruits is solely due to the growth in area and the productivity is unexpectedly low.

Lentils being one of the important exportable commodities are the important source of income for the poor farmers. The production growth has been good. However the present level of production and productivity is far below the achievable limits.

The performance of vegetables has been encouraging during the last decade. Moreover the growth has been brought about by growth in yield. Diverse agro-ecological conditions of Nepal offer high potentials for off-season vegetable production with considerable internal and external markets. The present off-season vegetable production is basically targeted towards import substitution. The yield levels are still low resulting in low competitiveness.

7.3 POST PRODUCTION PHASE

7.3.1 Post Harvest Management

Post harvest management includes grading, packaging, storage, processing and other product handling processes. It plays a vital role in agricultural competitiveness. In Nepal, post harvest management is not getting due priority. Due to the lack of knowledge and affordable facilities, the farmers do not consider post harvest management as an important function. In fact, it played major role in the quality of produces and increase the value addition. Due to the poor post harvest management of agricultural products in Nepal they are unable to reach the markets with standard quality and loosing their competitiveness.

Majority of the farmers sell their agricultural products immediately after harvesting them at low price with a few value additions. There are no cold-house/storage facilities in the rural areas. So the farmers who are involved in producing perishable agriculture products have to sell them immediately after the harvest. But the farmers who produce non-perishable items also sell them just after harvest. No visible effort has been made for the development of marketing infrastructure and techniques of preservation, storage and transportation with a view to reducing post-harvest losses and ensuring a better returns to the farmers.

7.3.2 Market Information and Access

Market information system of agriculture is not functioning effectively and is inadequate in Nepal. Available information in the city is not accessible to the rural farmers. Inadequate availability of market information is a vital bottleneck to commercialization of agriculture sector. Traders are the major source of market information about the agriculture product of the farmers. Other institutions like District Agriculture Development Office, co-operatives, and non-government organizations play minor role on market information. This indicates that while providing market information, there is a possibility that traders will provide such information more in favor of the traders rather than in favor of producers.

Due to lack of access of modern information technology like email, internet and even telephone facilities, most of the producers have no idea about international markets and opportunities. Without reliable market information producers are faced with difficulties in establishing linkages to the traders. So they are bound to sell their produces at low price. Lack of market information and low information analyzing capacity make them unable to grab the opportunity of international markets.

7.3.3 Forward Linkages

The agriculture production still has weak forward linkage with most of the agro-based industries. The majority of the agriculture production units are very small with poor investment capacity. The marketable volume of these individual units is also very small. The reported production and productivity situation is not satisfying and does not create environment for the development of agro-based industries. Low productivity, coupled with high production cost and small production volume, makes the Nepali agriculture less attractive for the development of processing industries.

7.3.4 Quality and its Standardization

Qualities of many of the Nepali agricultural products are quite competitive in the markets of neighboring countries. For example, Nepali lentils and ginger are not found to be price competitive from above price analysis. But, they are being exported to India due to quality competitiveness.

One of the major aspects of agricultural trade is quality. The consumers are becoming increasingly quality conscious and demanding stricter quality requirements. Exporting countries have to comply with the specifications laid down by the regulatory agencies in importing countries. Nepali farmers are not fully aware of the prescribed standards relating to cleanliness, pesticides residuals and microbial load.

Standardization and grading are prerequisites for improved marketing. It has become a fundamental marketing function without which the market of the Nepali products will be diminishing in the international markets. Present quality standardization mechanism is not as per international market requirements. For improving the quality of the products R & D on quality control are needed both in production as well as in post harvest product handling.

7.4 EXPORT / IMPORT PHASE

7.4.1 Trade Pattern of Agricultural Produces

In spite of its importance in the national economy, agriculture has a limited importance in terms of trade in Nepal. On average, over the 1990s, agricultural exports represented only 3.4% of AGDP, whereas total exports represented 10.31% of total GDP, an indication of relatively little trade orientation of Nepali agriculture. Similarly, agricultural imports are 7.7% of AGDP in the same period. It indicates that agricultural exports are less than agricultural imports. Agricultural imports share as a percentage of GDP has increased over the course of the years in the 1990s. However, agricultural exports are growing faster than agricultural imports.

Nepal has introduced policy of liberalization. However, to benefit from the changing policy environment and to ensure high level of agricultural growth it will require a shifting of incentives to support production of non-traditional crops for export rather than supporting the production of import substitution commodities.

7.4.2 Opportunity and Threat of WTO

The impacts of accession to the WTO on agriculture are mixed. Whether we get benefited or not depends on how we respond to the challenges and opportunities emerging therefrom. The WTO provisions for trade in services will increase the mobility of agricultural technicians. Nepal has opened the veterinary services with incorporation to Nepali firms with at most 51% of foreign equity capital. This will expedite the transfer of veterinary technology from developed countries to Nepal. The TRIPS measure is expected to accelerate the pace of generation of technology. It is needed to bring down tariffs on agricultural inputs and machineries to reduce the cost of production. Nepali present quarantine mechanism needs to be improved.

WTO agreement tends to emphasize on commercial agriculture. Therefore, there is need to increase domestic support to adopt commercial farming. Agricultural trade became more protected in the developed countries after the WTO, In Nepal the agriculture is left to compete in the open market without necessary hardening and acclimatization of farmers. Therefore, the small farmers are vulnerable to external forces. Under TRIPS agreement we have to protect the rights of the breeders. This may increase the cost of seed. Further, SPS/TBT have created an indirect challenge to our products.

As WTO opens the international markets, Nepali farmers are small in nature so, they may face difficulty in competing in the international markets. Therefore, we need to protect major commodities like food grains, fruits, vegetables, meat and milk and their processed products for protecting the interest of our farmers through appropriate policy measures. Non-tariff trade barriers will not be applicable in trade. It is needed to protect Nepali indigenous knowledge, practice and skills along with genetic resources.

We can protect the farmers and the breeders through the development of sui generis system. There is a need to reform our policy measures, legal structure, technical standards, safeguard measures as early as possible. Legal provisions and technical tools

need to be developed for analyzing the provisions and effects of contingency measures like anti-dumping, countervailing, safeguards and balance of payments.

Due to the WTO association, we need not to negotiate with each country for the export. Market access negotiations by others are also available to us (MFN Treatment). Other members can not discriminate us from others. For getting benefited from such provisions exploration of export markets and information support to exporters are needed.

7.4.3 Real Exchange Rate and Trade with India

The RER of Nepali currency is found to be lower than the NER and it is decreasing over the years. This is because the wholesale price index of Nepal is increasing faster than that of India. A decrease in the RER leads to the decrease in the competitiveness of Nepali products as compared to that of India. However, exports of all major agricultural commodities, with the exception of animal ghee, are found to be inelastic to the changes in RER. It can be concluded from the results that export of agricultural commodities is affected more by the non-price factors than price factors. This is because the most of the products are perishable and should be disposed off whatsoever is the price it fetches. Even if some of the products are storable, the farmers have low retaining ability. Moreover, exporters of agricultural products find very limited alternative markets in the Third World for the volume and form of the products they want to export.

Imports of all major agricultural commodities, with the exception of rice, are found to be inelastic to the changes in RER. It is because, most of the imports of agricultural products are basic needs and we have very limited alternatives to. It is found that one percent increase in the RER of Nepali currency with that of India there is about 15.13% decrease in the import of rice. In general, it can be concluded that rice is a sensitive product and its farmers are particularly vulnerable to the imports that increase with the decrease of RER.

7.4.4 Country and Product Diversification

Due to the traditional business linkages, India is the major trade partner for Nepal. India is absorbing about 30% of total exports. In the case of agricultural trade, the linkages with India are even closer. Agricultural exports to India represent about 72% of total agricultural exports and imports from India were 55% of total imports during the 1990s. It clearly indicates that Nepali agricultural trade is heavily dependant on India. Nepal is facing trade deficit with India in this trade. In the case of agriculture, Nepal exports relatively high value produces such as vegetable ghee, tea, cardamom, ginger, vegetables etc and imports mainly traditional food grains. However, value addition of the exportable produces can be improved.

Nepal has little trade turnover with other countries except than India. Only few products have been exported to other countries. Although she has opportunity to produce exportable commodities for the overseas markets Nepal has not materialized the opportunities. Linkages in trading of agricultural products with the market of overseas countries are not developed at all except in case of tea, coffee, spices and dry fruits. Due to the lack of market information, Nepali producers are unable to capture the opportunity of overseas markets. The traders of the developed countries are not properly aware of

Nepali produces and her traders are not motivated to trade agricultural products in the distant markets of Europe and America.

7.4.5 Price Competition with India

Nepal's major agriculture product the coarse rice, is price competitive in the Indian market during the harvesting time (months of Aswin to Magh). The fine rice is not appearing to be price competitive. It is generally believed that lentil is a competitive product. But, the analysis shows that none of the pulses of Nepal are price competitive, they are competitive in quality. However, wheat is found to be price competitive throughout the year except in the harvesting season. Due to the bulk production in India, Nepal is not price competitive in potato and onion. Vegetable ghee is found to be price competitive to Indian market. Neither in mustard seed nor its oil from Nepal are price competitive.

Except a few the Nepali agriculture produces are not price competitive with India. Agricultural subsidies provided by the Indian Government also help to make the Indian products more price competitive. Thus, either we have to reduce our price by increasing efficiency or we have to compete with high quality products. In the1990s, the trade position with India has some how improved due to improvement in the quality of products and better business linkages, as witnessed by the fact that agricultural exports to India as a share of total agricultural exports have increased from 67 to 76%, while the agricultural imports from that country as a share of total agricultural imports has declined from almost 60 to 50%.

7.4.6 Business Linkages with Trading Partners

Trading depends on the linkages between the trading partners. In Nepal the trade linkages in agricultural products with other countries are established through Indian traders. It has age-old historical linkages and market channels. Nepal has opportunity to export vegetables and fruits in the market of Tibet. However, due to the lack of agricultural business linkages it is yet to be materialized. Trading of agricultural products with the markets of overseas countries is not developed at all except in few countries. Agricultural products demanded in the markets of Europe and America are not grown in Nepal. In fact the Nepali agriculturists do not know the demands of the European and American markets. Market information system of such products is not developed properly in Nepal. Consequently, the farmers have been involved in the age-old practice of production. As the market system is not developed, they need to invest in the development of the infrastructure of market channels. Agricultural products being perishable they need to be transported to the consumer market very quickly and efficiently.

The land-locked nature of the country has made the cost of handling of the agricultural products high because the agricultural products are weight-loosing type. It is less competitive to export them to other countries. Therefore, the trading activities of such products are mostly carried in the nearby markets of India. If there is a low demand for such products the agriculturists are negatively affected. Therefore, there is the need for the production of such products in Nepal that command good prices in the nearby markets of India and China. To establish the business linkages with overseas markets, it is necessary to produce high value crops and focus on post-harvest management is needed.

CHAPTER VIII: MEASURES FOR ENHANCING COMPETITIVE STRENGTH OF NEPALESE AGRICULTURE

8.1 GENERAL PRINCIPLE

The analysis of the factors responsible for enhancing the competitiveness in Nepali agriculture is basically influenced by the degrees of transformation process. At this moment it is very much needed to understand the stages of development. It is generally accepted that the process of transformation of small scale-subsistence farming to commercial farming generally takes place in three stages. The first and the most primitive is the pure, low-productivity subsistence farm. The second stage is what might be called "diversified" or "mixed" agriculture, where part of the produces are grown for meeting the household demand for food and part for sale to the commercial sector. Finally, the third stage represents the "modern" farm, exclusively engaged in high-productivity, "specialized" agriculture guided by the principles of the commercial markets.

The process of transformation in the last two stages is a difficult and time consuming one because it is not related simply to the economic factors but with several non-economic factors that can not be immediately changed. As in most traditional societies agriculture is not just an economic activity; it is a way of life in Nepal.

His Majesty's Government of Nepal in order to transform its traditional agriculture must recognize that in addition to adapting the farm structure to meet the demand for increased production, changes affecting the entire social, political and institutional structure of rural societies will often be necessary. Without such changes, agricultural development will never get started.

8.2 POLICY MEASURES FOR ENHANCING COMPETITIVENESS OF NEPALESE AGRICULTURAL PRODUCTS

In order to implement these elements, through policy packages, it is necessary to adopt some steps by the government. The first and foremost requirement is the understanding of the market demand for the products in the markets of the developed countries. It can be done with the establishment of the business linkages with the trading organizations of the developed countries. Based on the need of the market, the products can be developed. Another constraint in the trading of the agricultural products with developed countries is the market restrictions imposed by the government of the developed countries for the import of agricultural products from developing countries. In this case the government of Nepal has to do proper lobbying in the developed countries with the support of the non-governmental organizations of the developed countries. In order to boost the competitiveness of Nepali agriculture by addressing key issues and bottlenecks identified in preceding chapter the following major recommendations grouped under four phases are proposed.

8.2.1 Pre-Production Phase

- Special attention should be given to evolve new location-specific and economically viable improved varieties of agricultural crops through adoption of biotechnology particularly, genetic modification, and expansion of seed and plant certification system with private sector participation. The use of bio-technologies should be promoted for evolving plants which consume less water, are drought resistant, pest resistant, contain more nutrition, give higher yields and are environmentally safe.
- Protection to plant varieties through a *sui generis* legislation should be granted to encourage research and breeding of new varieties particularly in the private sector in line with Nepal's obligations under TRIPS Agreement. Government should take leading role to protect rights of indigenous crop-seeds and indigenous technology.
- Sensitization of the farming community with the environmental concerns should receive high priority. Balanced and conjunctive use of bio-mass, organic and inorganic fertilizers and controlled use of agro-chemicals through integrated nutrients and pest management (INM & IPM) to be promoted to achieve the sustainable increases in agricultural production by improving the effectiveness of agriculture extension programs. Decentralized institutional changes should be effective to make the extension system farmer-responsible, farmer-accountable and broad based.
- Zoning of the country based of the comparative advantage of the agricultural products is essential in present stage. Product specific zone development and timely supply of required inputs and link it with the market network could lead to increase the volume of production. Government also, should encourage the private sector for more investment in such zone.
- The involvement of co-operatives and the private sector should be encouraged for agricultural extension activities. Private sector investments in agriculture to be encouraged more particularly in areas like agricultural research, human resource development, post-harvest management and marketing.
- Mainstreaming gender concerns in agriculture should receive higher attention. Appropriate structural, functional and institutional measures to be developed to empower women, to increase their control over resources, to build their capabilities and to improve their access to inputs & technology.
- Considerable transaction costs can be greatly reduced by targeted policies and investments to improve transport and utilities infrastructure. First, government should focus on upgrading domestic power networks by stimulating the private sector involvement and should revise these electrical tariffs for agricultural uses making them more affordable. The government should also work together with private sector in developing dry ports and other facilities. Investments should also be made to link the production areas with the highways and dry ports as well as improve/renovate the available infrastructure.

8.2.2 Production Phase

- To increase the productions and make them competitive, it is necessary to increase cultivation area of non-food / high valued crops. Product specifies zone development and timely supply of required inputs and link it with the market network could lead to

increase the volume of production. Encouragement of private /NGOs sector in inputs and services delivery in such areas should get high priority.

- Government regulatory mechanism should be strengthened to ensure adequate and timely supply of quality inputs such as seeds, fertilizers, plant protection chemicals, bio-pesticides, agricultural machinery and credit at reasonable rates to farmers.
- There is a need for the efficient use of factors of production in agriculture so as to increase the total factor productivity. The key to increasing agricultural productivity is the application of science and technology such as higher-yielding seeds, better land management, irrigation and integrated pest management system in order to take advantage of market opportunities. Thus, agriculture extension programs should be given high priority.
- Nepal is still depending on traditional technology of farming. Adaptation of new technology is desirable to increase efficiency. To give the incentives to the farmers, the customs, duty, VAT and excise duty on materials such as farm machinery and implements etc., used as inputs in agricultural production, post harvest storage and processing is proposed to be reviewed.
- In the first stage, government should encourage to mix farming to reduce the risk of cropping pattern changes.
- For providing timely and adequate credit to farmers it is necessary to institutionalize and further strengthen the rural and farm credit, thereby improving banks outreach and the credit flows to the poor in an effective and sustainable manner.
- To manage the risk of the farmer, it is necessary to make the National Agriculture Insurance Scheme and make it more farmer specific and effective covering all farmers and all commercial crops throughout the country with built in provisions for insulating farmers from financial distress caused by natural disasters. It is proposed to provide a package insurance policy for the farmers, right from sowing of the crops to post-harvest operations, including market fluctuations in the prices of agricultural produce.
- Nepal needs to produce such products in which Nepal has a more competitive edge or has more comparative advantages or geographical indication or some specific characteristics of the products like the organic ones.
- It is necessary to develop lease markets for increasing the size of the holdings by making legal provisions for giving private lands on lease for cultivation and agro-business.

8.2.3 Post Production Phase

- Emphasis should be given on the improvement post-harvest management and quality regulation mechanism. Farmers should be trained about harvesting methods, post harvest handling, packaging, and storage system.
- Emphasis to be laid on the development of marketing infrastructure and techniques of preservation, storage and transportation with a view to reducing post-harvest losses and ensuring a better return to the farmers. Storage facilities for different kinds of agricultural products should be developed with private sector participation in the production areas or nearby places particularly in the rural areas so that the farmers can transport their products to these places immediately after harvest weather the shortest possible time; so that they can increase their value addition.

- Nepali producers are not organized as traders from the point of view of trading of their products. Therefore they are to be organized so that their bargaining capacity is increased or they can have a good size of output to operate in a large scale of operation. This will increase the competitive strength of the Nepalese agricultural products. Cooperative farming and trading system will be useful in this regard.
- The database for the agriculture sector should be strengthened for greater reliability of estimates and forecasting. Without access of market information farmers are heavily dependent on traders' information, which are not much reliable. So it is proposed to strengthen the Agricultural Information Center with the participation of private sector. Government should help private sector for market studies, and business plans preparation
- Quality awareness should be provided to the farmers and Nepali quality standardization mechanism need to be made as international standard with participation of private sector.

8.2.4 Export Phase

- To accelerate export of agricultural products, it is necessary to develop separate agriculture export policy. National agriculture and trade policies, rules and regulations should be harmonized with WTO standards.
- A two-fold long term strategy of diversification of agricultural produces and value addition enabling the production system to respond to external environment and creating export demand for the commodities produced in the country is proposed with a view to providing the farmers incremental income from export earnings. A favorable economic environment and supportive public management system have been proposed for promotion of agricultural exports.
- Quarantine, both of exports and imports, should be given particular attention so that Nepali agriculture is protected from the ingress of exotic pests and diseases.
- Nepal has to develop business linkages with possible agro-trading partner-countries especially with countries lying within the middle income range, which might have demand for Nepali products. Such countries can be the countries of South East Asia, East Asia and West Asia. In these countries products of the temperate climate can be exported. These countries have less stringent regulations on the import of products from other countries. Similarly, it is necessary to promote business linkages with neighboring countries like India and China. In this connection direct road link between Nepal and India and Nepal and China would help to encourage the expansion of Nepali agricultural trade
- There is a need to enhance, at first, price competitiveness of agricultural produces through various supportive measures. In case if the price competitiveness is not possible to achieve, quality competitiveness needs to be emphasized.
- Misalignment of fixed NER of Nepali currency with the Indian currency (from RER) does not have much effect on the export and domestic competitiveness in agricultural products except for a few commodities. Thus, at the present moment there is no need to change the exchange rate to promote competitiveness of Nepali agricultural produces.

8.3 CONCLUSION

The present study has focused more on outward looking approach in agriculture sector with an aim to make some of its products more competitive vis-à-vis her trading partners. The findings of the present study have shown that Nepal has comparative advantage in some agricultural products but the competitiveness of such products has not yet developed. Consequently, such products are not in a position to compete with the products of other countries spontaneously. Therefore, there is a strong need for the support of the government to increase the competitive strengths of such products. To coordinate this function a coordination committee has been proposed under the chairmanship of member of NPC. The other members will be representatives from: Ministry of Agriculture, Ministry of Industry, Commerce and Supply, FNCCI and Farmers Cooperatives. In this context the measures proposed in the earlier sections of this chapter can be implemented by formulating short, medium and long-term action plans.

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ANNEX

ANNEX-1

Exchange Rate for Foreign Currencies (NRs. Per Currency Unit)

Mid-Month	US Dollar		Indian Rupees		Euro	
	Buying	Selling	Buying	Selling	Buying	Selling
1965 Jul	7.60	7.68	1.5975	1.6000	0.00	0.00
1966 Jul*1	7.60	7.68	1.0125	1.0160	0.00	0.00
1967 Jul	7.60	7.68	1.0125	1.0160	0.00	0.00
1968 Jul*2	10.10	10.20	1.3500	1.3515	0.00	0.00
1969 Jul	10.10	10.20	1.3500	1.3515	0.00	0.00
1970 Jul	10.10	10.20	1.3500	1.3515	0.00	0.00
1971 Jul	10.10	10.20	1.3500	1.3515	0.00	0.00
1972 Jul*3	10.10	10.20	1.3900	1.3915	0.00	0.00
1973 Jul*4	10.50	10.60	1.3900	1.3915	0.00	0.00
1974 Jul	10.50	10.60	1.3900	1.3915	0.00	0.00
1975 Jul	10.50	10.60	1.3900	1.3915	0.00	0.00
1976 Jul*5	12.45	12.55	1.3900	1.3915	0.00	0.00
1977 Jul	12.45	12.55	1.4500	1.3915	0.00	0.00
1978 Jul*6	11.90	12.10	1.4500	1.4515	0.00	0.00
1979 Jul	11.90	12.10	1.4500	1.4515	0.00	0.00
1980 Jul	11.90	12.10	1.4500	1.4515	0.00	0.00
1981 Jul	11.90	12.10	1.4500	1.4515	0.00	0.00
1982 Jul *7	13.10	13.30	1.4500	1.4515	0.00	0.00
1983 Jul*8	14.40	14.60	1.4500	1.4515	0.00	0.00
1984 Jul	16.30	16.50	1.4500	1.4515	0.00	0.00
1985 Jul	17.60	17.80	1.4500	1.4515	0.00	0.00
1986 Jul*9	21.10	21.30	1.6800	1.6815	0.00	0.00
1987 Jul	21.8	22	1.68	1.6815	0.00	0.00
1988 Jul	23.5	23.7	1.68	1.6815	0.00	0.00
1989 Jul	27.4	27.6	1.68	1.6815	0.00	0.00
1990 Jul	29.1	29.3	1.68	1.6815	0.00	0.00
1991 Jul*10	42.7	42.9	1.65	1.6515	0.00	0.00
1992 Jul*11	42.6	42.8	1.65	1.6515	0.00	0.00
1993 Jul*12	49	49.48	1.6	1.6015	0.00	0.00
1994 Jul	49.11	49.59	1.6	1.6015	0.00	0.00
1995 Jul	50.45	50.94	1.6	1.6015	0.00	0.00
1996 Jul	56.25	56.8	1.6	1.6015	0.00	0.00
1997 Jul	56.75	57.3	1.6	1.6015	0.00	0.00
1998 Jul	67.6	68.25	1.6	1.6015	0.00	0.00
1999 Jul	68.15	68.8	1.6	1.6015	0.00	0.00
2000 Jul	70.4	71.1	1.6	1.6015	65.85	66.5
2001 Jan	73.95	74.65	1.6	1.6015	70.59	71.25
2001Feb	73.65	74.35	1.6	1.6015	67.52	68.16
2001 Mar	73.65	74.35	1.6	1.6015	68.63	69.28
2001 April	74.15	74.85	1.6	1.6015	65.82	66.44
2001 May	74.4	75.1	1.6	1.6015	65.52	66.13
2001 Jun	74.4	75.1	1.6	1.6015	63.53	66.13
2001 Jul	74.65	75.4	1.6	1.6015	63.57	64.24

Source: Nepal Rastra Bank Bulletin

ANNEX-2

Real and Nominal Exchange Rate of Nepalese Currency with Indian Currency

Year	Nepal Consumer Index (urban)	India Consumer Index (worker)	Nominal Rate	Real Rate
1983	100	100	1.45	1.45
1984	105.2	107.1	1.45	1.48
1985	106.6	111	1.45	1.51
1986	126.4	121.5	1.68	1.62
1987	145.5	133	1.68	1.54
1988	163.2	143.1	1.68	1.47
1989	174.6	154.8	1.68	1.49
1990	191.4	168.4	1.68	1.48
1991	210.9	196.3	1.65	1.54
1992	262.3	221.5	1.65	1.39
1993	279.3	234.2	1.6	1.34
1994	304.7	261.5	1.6	1.37
1995	327	292.1	1.6	1.43
1996	349.3	317.3	1.6	1.45
1997	378	335.8	1.6	1.42
1998	407.3	386	1.6	1.52
1999	473.3	3992.2	1.6	1.33
2000	475.4	399.2	1.6	1.34

Source: ADB

ANNEX-3

Export of Agriculture Commodities (NRs. million) in year 2002/03

S. No.	Commodity	Export to India	Export to Overseas	Total Export	% share to India
1	Vegetable ghee	3811.90		3811.90	100.0
2	Jute goods	1899.00		1899.00	100.0
3	Twines	998.90		998.90	100.0
4	Pulses	875.20	210.46	1085.66	80.6
5	Sackings	855.90		855.90	100.0
6	Cardamom	468.00	127.60	595.60	78.6
7	Ginger	283.40		283.40	100.0
8	Rice bran oil	209.80		209.80	100.0
9	Catechu	140.00		140.00	100.0
10	Dried ginger	96.60		96.60	100.0
11	Herbs	94.00		94.00	100.0
12	Hessian	44.20		44.20	100.0
13	Linseed	43.40		43.40	100.0
14	Live animals	41.90		41.90	100.0
15	Vegetables	36.40		36.40	100.0
16	Ghee	24.90		24.90	100.0
17	Tarpentine	17.80		17.80	100.0
18	Cinnamom	4.70		4.70	100.0
19	Fruits	1.60		1.60	100.0
20	Wheat flour	1.00		1.00	100.0
21	Cotton seed	0.30		0.30	100.0
22	Raw sugar		386.20	386.20	0.0
23	Nigerseeds		10.59	10.59	0.0
24	Bulb tubers		7.99	7.99	0.0
25	Live plants		5.71	5.71	0.0
26	Cut flower		4.18	4.18	0.0
27	Vegetable products		3.88	3.88	0.0
28	Dried mushroom		3.68	3.68	0.0
29	Fresh mushroom		1.04	1.04	0.0
30	Vegetable seeds		1.00	1.00	0.0
31	Radish seeds		0.97	0.97	0.0
32	Honey		0.44	0.44	0.0
33	Buckwheat		0.37	0.37	0.0
34	Seeds, fruits & spores used for showing		0.28	0.28	0.0
35	Dried vegetables		0.26	0.26	0.0
36	Foliage and other plant parts		0.01	0.01	0.0
37	Cheese		0.01	0.01	0.0
38	Dried leguminous vegetables		0.00	0.00	0.0
Total		**9,948.90**	**764.66**	**10,713.56**	**92.9**

Source: HMG, 2004. Statistical information on Nepalese agriculture 2002/04, His Majesty's Government of Nepal, Ministry of Agriculture and Cooperatives, Agribusiness Promotion and Statistics Division, Kathmandu.

ANNEX-4

Enhancing the Competitive Strength of the Nepalese Agricultural Produces Terms of Reference (TOR)

1. Background

The importance of agriculture to the people and economy of Nepal could not be more evident. Seventy-six percent of Nepal's 4.25 million families cultivate some land; 70% raise some livestock; and 66% of the country's labor forces are directly engaged in farm work. Only about one-fifth of the families in Nepal are engaged in some kind of nonagricultural enterprises. Evidently, the well being of a vast majority of the Nepali population is directly linked with the performance of the agricultural sector.

Agriculture generates 40% of GDP and 27% of export earning in Nepal. During the past three decades, this sector's contribution to the national economy has fallen sharply-from 70% in 1975 to 40% in 2001. But the proportion of population dependent on this sector has not declined as much. Growth in agricultural productivities has been far below the rate of population growth, and crop yields are now among the lowest in Asia. Consequently, labor productivity is very low, and poverty level high and persistent.

Nepalese agriculture is dominated by cereal crops, which account for over 80% of the gross cropped area under temporary crops. Accordingly, disproportionately large share of public sector developmental efforts in agriculture, including agricultural research and extension, have been allocated to the development of cereal crops-mainly rice, maize impressive. Overall, Nepalese agriculture has remained largely traditional and subsistence-oriented.

Understanding the key role of agriculture tin Nepal's overall economic development, a long-term agricultural perspective plan (APP) has been under implementation since 1997. The most important tenet of APP is that commercialization of agriculture is the key to both high economic growth and rapid poverty reduction in Nepal. Commercialization implies that production is market-based and products are competitive.

Competitiveness of Nepalese agricultural products has become a serious subject of urgent investigation – from the perspective of both domestic and foreign markets. There are evidences that Nepalese products are losing their competitiveness to imported products even in the domestic market. On one hand, a number of Nepalese agricultural products, which are used as raw materials by agro-industries, are lacking access to domestic market. On the other hand, domestic agro-industries are lacking access to domestic market. On the other hand, domestic agro-industries are dependent on imported raw materials. Two decades ago, Nepal was a net food exporter country now it became net food importer. It shows that competitive strength of Nepali agricultural produces are not satisfactory.

The ongoing Tenth Plan has laid special emphasis on monitoring and evaluation (M&E). One of the three strategies of the Plan in terms of strengthening the M&E system is to carry out policy evaluation in respect to its impact on poverty alleviation. As stated elsewhere, the impact of agricultural growth in poverty alleviation is well documented. Therefore; in this fiscal year 2060/61, national Planning Commission Secretariat (NPCS) has intended to conduct a study to find out the ways of making the agriculture sector competitive in the national as well as global market. Central Monitoring and Evaluation Division (CMED) of NPCS will be responsible to conduct and supervise the study. For this purpose, an officer from CMED will be involved to assist and supervise the study including the fieldwork. A Steering Committee shall be formed in NPCS to review and guide the study.

This study is intended to assess the impact of economic policies in agriculture production and productivity and to explore the means of making the agriculture produces of the country competitive as compared to its major trading partners.

2. Objectives of the Study

The objectives of the study are as follows:

- To examine issues concerning the productivity and diversification of agriculture,
- To address factors that are hampering the commercialization and exports of the agriculture sector,
- To assess impact of the liberalization measures adopted by the government in the agriculture sector,
- To assess the pattern of use of inputs by farmers in a changing government support system,
- To recommend future course of action to be adopted by the Government keeping in view the factors such as economic liberalization, Nepal's accession to the world Trade Organization (WTO), SAARC Preferential Trading Arrangement (SAPTA) and South Asian Free Trade Area (SAFTA) Agreement.

3. Scope of the Study

Major activities proposed under the study comprise the following:

- Reviewing the literature about the agriculture development as well as liberalization,
- Field visit to assess pattern of crop intensity, crop diversification, commercialization, use of inputs, service delivery by public agencies etc,
- Studying total factor productivity (TFP) of the agriculture sector,
- Finding out real exchange rate (RER) and terms of trade vis-à-vis the major or would be major trading partners of agriculture produces abroad.
- Recommending policy to be adopted by the Government for harnessing the agriculture sector's competitiveness.

4. Detailed Terms of Reference

Remaining within the broad scope and the objectives of the study as mentioned above, the consultants will, but not limited to, carry out the following:

- Review related government plans, policies, programs, reports and studies,
- Review trade, exchanging rate and agricultural policies of major trading partner countries of agricultural products,
- Calculate the total factor productivity of the agriculture sector.
- Calculate the pattern of terms of trade in agriculture products with major or potential trading partners,
- Determine the RER with the currencies of the major trading partners and elasticity of exports and imports of agriculture produces with respect to change in RER,
- Assess the competitiveness of agricultural produces in domestic market in terms of:
    - Agriculture production and productivity trends including economic and financial cost of production,
    - Price support and input subsidy system including tariff on imported goods, impact of liberalization of fertilizer trade and other input markets,
    - Input supplies and product marketing (channels, costs etc.),
    - Product quality and standardization,
    - Comparative (analysis of) features of agricultural products and production system on policy environment in Nepal and competing country market,
    - Forward linkage with agro-industry sector (issues and constraints),
- Evaluate the competitiveness in export market with respect to:
    - Agricultural export policy and procedures in Nepal,
    - Comparative advantage and competitiveness of major (key) exportable commodities,
    - Tariff and non-tariff policies (barriers) for Nepalese agricultural products in potential export markets,
    - Patterns of agricultural trade and trends in product and market diversification,
    - Support services and facilities being provided to the farmers in neighboring countries in relation to their counterparts in Nepal.
- Recommend the measures that have to be adopted by the Government in regard to:
    - Priority investment packages for agriculture development and promotion of exportable commodities,
    - Measures for risk reduction in agriculture production and related business,
    - Policy support packages for enhancing competitiveness of Nepalese agricultural products and their phased action plan.

For the purpose of the study, the contracting party would perform a survey of the relevant areas. An appropriate survey methodology would be adopted and sampling process would be determined in consultation with CMED. The purpose of the survey will be to examine in-depth the overall benefits and the effectiveness of the agriculture sector. The

consultants will submit their suggestion regarding the sampling of the areas and modes of survey. The methodology and areas of inquiry under the survey will be selected keeping in view the detailed terms of reference provided above. In addition, appropriate models would also be applied to determine various variables as required by the study.

5. The Services

The following consultant services would be required for the study:

I. Team Leader (Policy Evaluation Expert).
II. Macroeconomist,
III. International trade specialist,
IV. Agriculture scientist,
V. Statistician and input output analyst.

In addition, an officer of CMED shall be involved in the study. The study would require the services of short-term experts. Research assistants and trained enumerators to interview respondents to obtain personal insights and conduct field observations and case studies.

6. Contact Office

The contact office will be Central Monitoring and Evaluation Division of National Planning Commission Secretariat, Singh Durbar, Kathmandu. The fax number is 4241660 and phone numbers are 4241675 and 4229069.

7. Steering Committee

The steering Committee shall be chaired by the Member (agriculture and forestry) of the NPC. The Division Chief of CMED and representatives of Agriculture and Forestry Division, Macroeconomic Division of NPCS, representative of Ministry of Agriculture and Cooperatives, Ministry of Industry, Commerce and Supplies and Nepal Rastra Bank shall be members of the Committee.

8. Duration of Study

The study must be completed by 10th Ashad, 2061. The contracting party shall submit inception report to the CMED and obtain instructions for the next step. S/He or the Party shall obtain comments form CMED on the draft report before preparing the Final Report. Submission of various reports during the course of the study shall be as follows:

I. Inception Report (3 copies): within 21 days from the date of signing the contract.
II. Field Report (3 copies): within 70 days from the date of submission of inception report.
III. Draft Report (5 copies): within 21 days from the date of submission of field report
IV. Final Report (20 copies): within 21 days from the date of submission of Draft report