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Prospect Of A Cold Storage In The Far Western Development Region Of Nepal

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INTRODUCTION

The Far Western Development Region is desperately awaiting a cold storage facility. In view of its primarily being an agrarian society and also of its urgency of catching up the rest of the nation in industrial development a cold store is in order. The production of fruits and vegetables is seasonal in nature while their consumption pattern is distributed throughout the year. This exigency of seasonality and consequential severe price fluctuations accompanying periodic glut and shortage lie behind the incorporation of the store. In the absence of a proper facility, periodicity also implies de-motivation for terain area vegetable producers as well as remote area fruit products. Records, both official and unofficial, clearly manifest this reality in production far below potential and off-season imports from India. A cold store will also facilitate many Gos, NGOs, and INGOs launched/planned agricultural development projects. It will ensure farmers of safety by guaranteeing to purchase products and help them by providing improved seed potato.

The topographic location of Kanchanpur district is latitude 28°32′ - 29°8′ and longitude: 80°3′ - 80°33′, with the range of elevation 176 m. - 1528 m. It lies within tropical to sub-tropical climatic zones with major rivers being Mahakali, Mohana, Syali etc. According to 1998 projection, the total population was 348973. Among the population, 10 years and above, 52 percent constitutes economically active. 77.8 percent of land area is cultivated of the total of 35383 hectares; wet land to dry land ratio is quite high, 131.5 percent. *Abbal* and *Doyam* land constitute 75.55 percent of all classified land. Both cash crops and cereal crops are cultivated and in 1995/96 there was a food surplus of 39485 MT over the required 57828 MT. Of the total irrigable area of 40891 hectares 22697 hectares were irrigated in 1997. Ground water is a reliable source and estimated to have covered 8059 hectares, 17 percent of potential yet to be realized. Similar statistic can be obtained for Kailali District as well. (NRA 1999). The whole region is composed of varied topography from cold climates to temperate to tropical, producing a variety of fruits and vebetables. In 1997/98 marketable potato and vegetables in Kailali and Kanchanpur district alone were 19885 MT, while fruit production in five different district was estimated at 14982 MT.

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Both Kanchanpur and Kailali districts have a good network of road transportation. Highways as well as link roads have made the districts accessible to other major towns, centers of the region and nation as a whole. There are also airport facilities in many districts of the region. Electricity, communication, and telecommunication facilities are rapidly expanding in the area; financial sector is forthcoming as well. However, the whole of the Far Western Development Region is industrially backward. Till 2054/55 B.S. there had been 34 industrial establishments in Kanchanpur district. (OCR 2055 B.S.). A cold store will give fillip to industrialization in this milieu.

THE CONCEPT OF AND NEED FOR A MULTI-CHAMBERED COLD STORE

Agricultural products are characterized by seasonality. The prices during harvest season hit rock bottom while they soar back in off-season. The lack of storage facility is manifested in heavy post-harvest losses and seasonal price swings. Unlike cereal grains, which can be stored in ordinary warehouses, succulent products like fruits and vegetables require cold chambers storing. Establishment of a multi-chamber cold store, therefore, is essential for the agriculture and horticultural development in a country like Nepal marked by seasonal price variations and post harvest losses.

Table 1 is helpful in comparative study of cold storage situation in Nepal and India.

Tabel 1
Cold Storage Situation In Nepal And India

Particular	Nepal	India
Average size (MT)	1000	4000
Chamber type	Single chamber	Mostly multi-chamber
Technology type	Mostly diffuser	Mostly bunker
Electricity tariff	NRs 4.90	NRs 3.48
Rental per kilo per season	NRs 2.00	NRs 1.12 (UP)
Interest rate percent Capital Cost Operational Cost	 14 17 (ADBN)	15 (UP) 13.5 (Bihar) 16.5 (Bihar)
Pledging Facility	Non-existent	Exists
Loan on pledged goods as percent of the value of goods	Non-existent	70

Note : Recently the Government has reduced interest rate to 12 percent from the previous level of 14 percent on capital cost.

Source : Nepal Agri Brief, No. 35, Boosting Cold Storage Facilities in Nepal November, 1998 Ministry of Agriculture HMG/Winrok International.

Potato is the only commodity in the minds of entrepreneurs in Nepal, and consequently most of the stores are single-chambered. Multi-chamber cold-stores, on the other hand, enable the storing of several commodities at a same time as different commodities require different temperature and humidity regimes. Multi-chamber storage is also cost-effective as it cuts down on electricity consumption when capacity is not fully utilized. Tight packing of chambers also creates better storage conditions ensuring the better quality of stored products.

Prerequisites

— Prospective site: The site can be located anywhere along the Mahendra Highway. Daiji VDC, on the Mahendra Highway, at the distance of 8 kms. from the Mahendra Nager, is one such suitable site.

— Transportation and Communication: The site on the Mahendra Highway has a good network of transportation and communication. It is about 32 kms. away from Attaria, the highway junction of the region. All the 20 VDCs and one Municipality of Kanchapur District have telecommunication facilities.

— Construction and maintenance facilities: Both skilled and unskilled labour are available for construction, operation, and maintenance. Small fabricating and mechanical works are possible from local workshops.

— Electricity: Electricity is available at the prospective site through 132 KV/400 V from the national grid by Nepal Electricity Authority.

— Water: As the prospective site exists in the terain region, the main source of water supply is deep tube well, which guarantees against scarcity. The water quality of the area is soft.

Demand

Both Mahendra Nagar and Dhangarhi have been developing rapidly as major growth centers. They are connected to major towns/centers of the region as well as the rest of the nation through a network of highways and link-roads. Both local and inter-town trading and commercial activities have been expanding over the years. Accompanying expanding commercial activities is population growth. The population of Kailali and Kanchanpur districts (Table 2) is 417891 and 257906 respectively.

Table 2
Population Of Kailali And Kanchanpur Districts

S.N.	District	Male	Female	Total	Household
1.	Jaukaku	210127	207764	417891	60928
2.	Kanchanpur	130023	127883	257906	40056

Source : Population Census 1991, Central Bureau of Statistics, HMG/Nepal.

Population is one major factor in determining consumer demand of the storage porducts. A proper and adequate store will not only be able to cater to the households of Kailali and Kanchapur districts but also to the populace of the whole region.

The local fruits and vegetable growers and traders are the major claimants of storage demand . They are the ones to utilize the facility with the purpose of storing the products during peak seasons for the purpose of selling them during off-seasons when the prices are higher.

Another vary important component of demand is high-value seed potato as it ensures high porduction and protection against numerous diseases. Presently, the farmers produce and keep the seed potato in their own houses. They also use improved seed potato which requires storage facility. According to the chairman of small farmer cooperation Ltd., financed by ADB Kailali, Mr. Nanda Lal Bhatta, Shirpur, Kailali, areas likely to be covered by prospective cold store have been using seed potato for the last five years from the stores of Bhairahawa which is about 400 km. away. The target customers of seed potato of the prospective cold store are farmers of Kailali, Kanchampur, Banke, and Bardia district. Seed potato required for the potato cultivation in Kailali and Kanchanpur district alone is about 563 MT, whereas it is about 1503 MT for Banke and Bardia.

According to the manager N.B. Chand, ADB, Hasulia, farmers of the region send potato in harvesting seasons to the stores of Bhairahawa in order to bring back them as seed potato in cultivation seasons. Recently stores in Bhairahawa have shown their reluctance to store potato from the farmers of Kailali and Kanchapur district owing to lack of space.

Supply

There will be no dearth of supply of agricultural products in the short period as wll as over long run. According to District Development Offce, Kailali, seven pocket areas-Olani, Rajipur, Maghi, Bainiya, Manikpur, Gauniyaina, and Munuwa are selected for preferential commercial vegetable farming under the master plan of Agriculture Prospective Plan (MOA 1998).

At present, vegetables grown in the areas going to be coverd by the prospective cold storage are: Potato, Brinjal, Cabbage, Cauliflower, Coriander, Lady's Finger, Pumpkin, Radish, Turnip, and others. Executive Director, Dr. D.B. Shakya of Agro-Enterprises Center (AEC/USAID) have informed an official meeting that AEC is starting to grow off-season vegetables in Sahajpur, hillside of Kailali district, for the purpose of supplying local market and bordering areas. According to Mr. Subash Singh, Programme Officer of Winrock International/Farmer to Farmer Programme, Winrock International has paid special attention to develop the hybrid orange and sweet orange in Baitadi district. District Agriculture

Development Officer of both Kailali and Kanchanpur have given increasing attention to raise the production of the following fruits in the district:
Citrus: Lemon, Lime, etc.
Ohters: Banana, Jack fruits, Litchi, Mango, Pineapple, etc.

The current status of fruits and vegetables in the different districts is shown in (Tables 3 and 4). In FY 1997/98, a total of 65432 MT of fruits and vegetables was produced in five districts of the region.

Table 3
Production Of Fruits And Vegetables In Concern Districts
(FY 1997-98)

(In MT)

S.N.	District	Crops Production								
		Mango	Orange	Sweet Orange	Apple	Lime	Lemon	Vegetables	Banana	Guava
1.	Kailali	1613	—	—	—	—	—	16120	983	559
2.	Kanchanpur	1415	—	—	—	—	—	10509	773	833
3.	Baitadi	40	1292	775	1037	251	13	5800	—	103
4.	Dadeldhure	456	718	606	154	129	230	2201	251	513
5.	Doti	137	606	182	307	210	23	5220	66	456
	Total	3661	2616	1563	1749	590	266	40450	2073	2464

Note : — Means not produced in the district.
Source : Statistical Information on Nepalese Agriculture 1997/98, Ministry of Agriculture, HMG.

Table 4
Potato Production In Kailali And Kanchanpur Districts
(FY 1994-95 to 1997-98)

(In MT)

S.N.	Year	Kailali	Kanchanpur	Total
1.	1994/95	15000	8800	23800
2.	1995/96	7043	12100	19143
3.	1996/97	8500	8400	16900
4.	1997/98	4000	2905	6905

Source : Statistical Informational on Nepalsese Agriculture, 1994/95 to 1997/98, Ministry of Agriculture, HMG.

According to local traders, the reported production figures are less than actual production since these do not fully take into account the domestic production at household level. The farmers and traders have expressed their willingness to supply and store the fruits and vegetable in the cold store. In fact, one of the reasons for the drastic down fall in potato production which had been tumbled down from the level of 23800 MT in 1994/95 to 6905 MT in 1997/98 in Kailali and Kanchanpur districts (Table 4) may be attributable to lack of storage facility. Experts assume that

the quantity of fruits and vegetables estimated to be brought to market from different districts of the region is 50 percent of actual production.

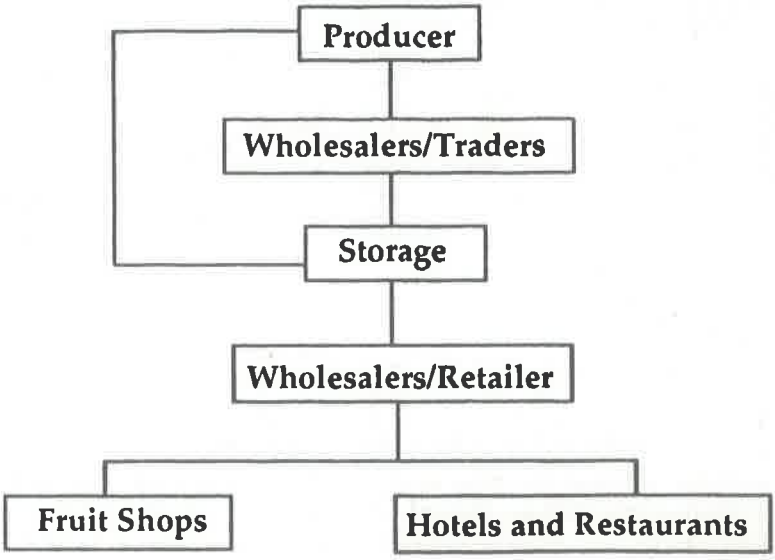
According to 1997/98 statistical information of Kailali and Kanchanpur the annual gross production of all vegetable and fruits including potato was estimated at 39710 MT (Table 3 and 4). Of this quantity, 19855 MT or 50 percent of the gross production was marketable. Similarly, fruit production in different districts was estimated at 14982, of which 7496 MT was marketable. (Table 3). All the above figures are pointers to the inevitability of a store. In order to boost up supply, a properly managed cold store may take initiative in production of different vegetable and fruits by contracting and encouraging farmers to take up the cultivation of particular products. It may provide technical assistance and improved seeds to the cultivators and guarantee to purchase their products as well.

Impact Of Cold Store

A cold store will be instrumental in establishing a chain of marketing and distribution activities. It has been observed that, in the absence of a facility, difficulty at all levels through producers to wholesaler to retailers to final consumers has been felt. The Schematic Diagram 1 will show the post cold store impact on creating and simplifying the channel of marketing and distribution.

Diagram 1

Schematic Flow Of Fruits And Vegetabel Products



The trading and marketing centers of Kailali and Kanchanpur districts are located along the Mahendra Highway making it easier for a store to serve to the needs of the Kailali and Kanchanpur districts and neighbouring districts such as Baitadi, Doti, Dadeldhura, Darchula etc. as well.

The Table 5 suggests that there is marked difference between potato prices in Kailali and Kanchanpur districts on the one hand and bordering towns of India on the other. A cold store may help bringing down prices by inducing adequate supply. It may also narrow down the gap between peak-season prices and off-season prices, the normal variation between them is almost 300 percent leaving aside gyrating swings.

Table 5
Retail Prices Of Potato In Kailali, Kanchnapur And the Boarder Areas
(In NRS/Kg)

SN.	District	Peak-Season Price	Off-Season Price
1.	Kailali	6.88	16.00
2.	Kanchanpur	7.00	14.00
3.	Rupaidiya (UP)	4.50	12.00
4.	Banbassa (UP)	6.00	12.00

Source : Agricultural Marketing Information Bulletin, Special Issue 1997, Marketing Development Division, Department of Agriculture, HMG/Nepal.

Apart from seasonal price variations, lack of storage facility also leads to substantial post-harvest losses. It is also observed that Indian traders purchase large quantity of fresh fruits and vegetables from Nepal at the time of harvest when prices are low and supply back the same products to the Nepalese consumers when prices are high. It is paradoxical that, despite sufficient production, potato importation recorded in FY 2055-56 B.S. in Kailali and Kanchanpur customs offices are 1100 MT and 2335 MT respectively.

General consumers will be benefited from timely and adequate supply. They will also be saved from the scourge of severe price fluctuations and exorbitant prices. An establishment of a cold store will certain to motivate the farmers to go for higher production an excess of current consumption can be stored. Willingness of some of the farmers to switch over the production of cashcrops from traditional farming may be materialized in the presence of a store. Cold store, thus, may prove to be

helping hand in improving the living standards of the farmers and producers.

Owing to rapidly expanding link roads many fruit growing temperate regions are accessible. A cold store is sure to encourage the production of such areas. A cold store will complement agricultural development plans by providing storage facility. Installation of an ice plants as an adjunct to the main store is feasible without incurring any additional fixed cost on various equipment required except for the ice making plant. This will ensure better quality and adequate ice supply to the local markets in cheaper price.

CONCLUSION

The whole of the far western region is deprived of a cold storage facility. The nearest one is about 400 kms. away in Bhairahawa. As a consequence, this has become a major hindrance and de-motivation for the agricultural products in the region. Because of rapidly expanding link roads and other infrastructure facilities, the products of many remote areas are accessible. Owning to lack of storage facility such product are not getting requisite impetus. There is surplus of many vegetables and fruits, yet data clearly indicates off-season importation of these very products from India in higher prices. Many new agricultural development plans are going to be launched by INGOs as well as various governmental bodies. Without the support of proper storage facility they will face difficulty in achieving targets. The imperative for a cold storage cannot be overemphasized. It will complement the overall development process and will be instrumental in improving incicators of development.

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Book Review

Mankar, V.G., *Business Economics*, Macmillan India Limited, Delhi 1999, pp. 581 including Index, price 198 IRS.

The book under review is written by professor Mankar and is targeted to bankers and covers the subject matter of business economics in such a great detail that it helps to develop professionally qualified and competent bankers primarily through a process of continuing professional development thereby enhancing their professional and academic competence to a still higher degree.

The book incarporates twenty six chapters ranging from Economic and Business Forcasting, chapter six, to Approach to Competition and Efficiency, chapter twenty five.

Chapter one deals with the preblems of decision making and forward planning in a very lucid manner establishing a clear distinction between Managerial Economics and Traditional Economics. As Managerial Economics is concerned with the application of economic principles and methodology to the decision- making process with firm or organisation under condition of uncertainty, the author is right to say that it seeks to establish rules and principles to facilitate the attainment of the desired economic goals of management. Thus, these economic goals relate to cost, revenue and profits and are important within both the business and the non- business institution. In this context chapter two to five deals with goals of firm, demand analysis, elasticity of demand, empirical demand estimation and demand forcasting. Chapter six deals with the economic and business forcasting with secular trends, cyclical fluctuations and seasonal variations. Economic or business forecasting is necessary for forecasting the long term demand for the firm's product, products. This enables the firm to know in advance the situation that may prevail after five, ten or fifteen years. Only then the firm can predict the level of consumers' income, the pattern of income distribution, likely changes in the standard of living and therefore, tastes, fashions, preferences, etc. of the consumers. The author opines that then the likely demand for five, ten or fifteen years can be ascertained and planning for the future can be undertaken and the firm can decide about the future scale of operation, the volume of production, new projects, expansion programme etc.

Chapter Seven to ninetten deal with traditional economic theories with managerial economic approach and cover the subject matter of production function, laws of returns, cost of production, breakeven analysis, pricing theory and pricing practices, capital budgeting and investment decision, cost benifit analysis. Chapter twenty focuses on government intervention in the market and the author here traces the controversies between the laissez-faire and protection since the time of Adam Smith to new dconomic policy of J.M. Keynes to the time of WTO

èmergence and comes to the conclusion that government intervention in market is still justifiable from the supply management side inspite of growing global economy. Chapter twenty one to twenty four deal with the prevention and control of monopoly, institutional finance and protection of consumer interest arguing that welfare loss due to monopolies will destablise business so it should be prevented by intervention, justifying the necessity of inssitutional finance in this regard.

Approach to competition and efficiency has been dealt in chapter twenty five and six. The author here argues that controls and restrictions led to the abuse of power, throttling competition and making both private and public sector enterprises weak and inefficient. In the light of Indian experiences the author spells out that protection in the form of heavy import duties which led to cost escalation due to inefficient use of resources, misuse of resources, blackmarketing due to price controls and output controls. The policy of licensing led to monopoly growth of large industrial houses and there was concentration of economic power in a few hands, and notes that it is after New Industrial Policy of July 1991 that Indian economy is moving towards efficiency, privatisation, liberalisation and globalisation with state precaution.

The book provides a very lucid analysis of business economics which must be gone through by the bankers, business economists and scholars interested in the economics of business.

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