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Export Potential of Onion: A Case Study of India

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Agriculture occupies an important position in India as it contributes nearly 30 per cent of the gross domestic product and provides employment to around two-thirds of the nation's population. A large variety of tropical, sub-tropical and temperate crops are cultivated in the country supported by a climatically conducive growing environment, highly skilled manpower, extensive irrigation system, a well-developed extension and research and development network, and a large market for agro- products. The total net sown area in the country is around 143 million hectares, which is around 43 per cent of the geographical area. The net irrigated area is around 55 million hectares or 39 per cent of the net sown area. However, one important emerging feature of Indian agriculture is the increasing number of marginal (less than 1 ha) and small size holdings (1.0 to 2.0 ha). Between 1985-86 and 1990-91, the number of marginal holdings increased from 56.147 million to 63.389 million, while the small size holdings went up from 17.922 million to 20.092 million. Even the number of semi-medium size holdings increased during the same period from 13.252 million to 13.923 million. According to the 1990-91 Agricultural Census, 91.3 per cent of the total holdings in the country comprise marginal, small and semi-medium holdings which together account for 55.6 per cent of the operated area. This decreasing size of operated area often diminishes the efficiency of production and the bargaining power of the individual farmers in the market.

Agricultural commodity exports account for nearly 20 per cent of the total export earnings of the country. Coffee, tea and mate, oil cakes, tobacco, cashew kernels, spices, raw cotton, rice, fish and fish preparations, meat and meat preparations, fresh fruits and vegetables, and processed fruits and vegetables constitute the major export items among agro-products from the country. Among the horticultural commodities, processed fruits and vegetables accounted for the largest share of exports followed by fresh fruits and vegetables. Among fresh vegetables, onion, tomato and mushroom are reported to be highly export competitive (Kumar, 1996; Paroda, 1999).

Onion is one of the important vegetable crops grown in India. In terms of area, India ranks first in the world with over 480 thousand hectares accounting for around 21 per cent of the world area planted to onion. Globally, the country occupies the second position after China in onion production with a production share of around 14 per cent. Productivity, however, is low at around 11.4 mt/ha, which is lower than the world average of 17.3 mt/ha. Besides India and China, the other major onion producing countries are Turkey, Pakistan, Brazil, United States of America, Iran, Spain and Japan. In India, onion is extensively cultivated over a large area spread almost throughout the country. It is produced for both domestic consumption as well as exports.

Domestic Production

Onion is a crop of national importance and considerable attention has been paid by the National Agricultural Research System of the country to the improvement of this crop. The National Horticultural Research Development Foundation, sponsored by the apex level cooperative called the National Agricultural Cooperative Marketing

Federation of India (NAFED), and the National Research Center on Onion and Garlic of the Indian Council of Agricultural Research (ICAR) are engaged in systematic efforts for the improvement of onion. Besides these two organizations, several other crop research institutes of the ICAR and state agricultural universities are also involved in research on onion. In 1995, a National network scheme was initiated at 15 centers by the ICAR Research Network for the promotion of hybrid research in vegetable crops to develop F₁ hybrids for 9 important vegetables among which onion is also one of the important crops (Singh and Pal, 1996). India produces all three varieties of onion – red, yellow and white. The different institutes engaged in research on onion have developed 34 varieties of the common and multiplier onion. Besides these some local varieties, especially Nasik Red, Patna Red, Bombay Red, Poona Red, and Bahadurgarh Local, are also grown by the farmers.

A large variety of vegetables are grown in India. In the agricultural year 1998-99, onion accounted for around 8 per cent of the area and 3 per cent of the production of vegetables in the country (Table 1). Although onion is cultivated almost all over the country, the major onion growing states are Andhra Pradesh, Bihar, Gujarat, Karnataka, Madhya Pradesh, Maharashtra, Orissa, Tamil Nadu and Uttar Pradesh. These nine states together account for over 90 per cent of both the area and production of onion in the country (Table 2). In the northern part of the country, onion is usually grown in winter (*rabi*) season. However, in the southern and western States of Andhra Pradesh, Karnataka, Tamil Nadu, Gujarat and Maharashtra, it is grown in winter (*rabi*) as well as in the rainy (*kharif*) seasons. A red onion variety, N 53, has been successfully developed for the northern Indian plains and the National Horticultural Research Development Foundation has taken up this technology on a large scale at farmers' fields in Harlan, Punjab, eastern Uttar Pradesh, Bizarre and Rajasthan. Thus onion is cultivated and is available to domestic consumers, as well as for the exports, throughout the year.

Onion Exports

India is a traditional exporter of fresh onion. Immediately after independence in 1951-52 the country was exporting over 5000 tonnes of onion per annum. Exports of onion started expanding rapidly during the sixties and reached a peak level of 427 thousand tonnes in 1996-97. Over the years there has been a progressive increase in the exports of onion from India. Table 3, however shows that although there has been an increasing trend in the quantum and value of exports of onion from the country, there also are apparent wide fluctuations in both from year to year. This may be attributed to the fact that the exports of onion have not been free but are canalized through NAFED and now also some other agencies. One over-riding concern of the canalizing agencies has been the protection of the domestic consumer and producer from unduly high prices and gluts. Exports have been allowed only after domestic requirements have been met which may be a cause of the fluctuations in exports from year to year. Exports of onion have fetched for the country valuable foreign exchange and have earned for the producers a high price per tonne. In terms of dollars, the decline in the unit value after 1990 may be attributed to the devaluation of the rupee. The profitability and the potential offered by

the exports of onion are evident from the fact that, on a national basis, the area under onion is steadily increasing, having almost doubled between 1980-81 and 1998-99 (Table 4). The increase in area has been particularly significant after the initiation of the economic and trade policy reforms beginning in 1990 –1991 which have helped to liberalize trade in agricultural commodities.

The export market mix for onions changes from year to year, but India's onion exports cater mainly to the neighboring South East Asian countries and some Middle East nations. Malaysia, UAE, Sri Lanka, Bangladesh, Singapore and Saudi Arabia account for the major share of exports from India (Table 5). In 1997-98, India exported onions to 36 countries.

The Marketing System: Institutional Support for Marketing and Trade

Exports of onions from India are not free but are permitted only through certain designated canalizing agencies. Foremost among these agencies is the National Agricultural Cooperative Marketing Federation of India, Limited (NAFED), which was from 1974-75 till January 1999, the sole canalizing agency for onion exports. NAFED, located in New Delhi, was set up in October 1958 to provide market support to agricultural producers. This market support to producers is provided by NAFED through various state level marketing federations, primary agricultural marketing societies and the National Cooperative Development Corporation. In order to provide marketing support to producers and ensure a better price to them, and also to maintain the availability of the commodities in the domestic market at reasonable prices, NAFED undertakes internal trade in agricultural commodities especially food grains, pulses, oilseeds, cotton, jute, spices, fruits, vegetables and eggs. NAFED also engages in external trade and a variety of agricultural commodities are exported by NAFED. In fact the exports of agricultural commodities through the cooperative system in India developed only after NAFED came into existence. As a part of its external trade activities, NAFED also undertakes imports of agricultural commodities as and when requested by the government.

Price support programs

Since NAFED is responsible for providing marketing support to producers and ensure that they receive a remunerative price for their product, it also undertakes support price purchases of various commodities for the government. It is the key agency for implementing the price support policy program in respect of oilseeds and coarse grains. For onion, NAFED intervenes in the domestic marketing whenever there is glut in the market and prices reach uneconomical levels. Prices prevailing in major markets all over the country are reviewed every day in this process. Procurement prices of onion are decided by NAFED on the basis of cost of production and procurement is initiated in the markets and from the farmers directly. This benefits the producers, particularly the small producers, who have low carrying capacity and are constrained to sell immediately after harvest on account of financial constraints.

In case of external trade, NAFED is responsible for fixing the minimum export price (MEP) of onions, which is done on a monthly basis. The Price Fixation Committee of NAFED decides this price. Factors such as market trends, world prices and domestic prices, and margins are considered for arriving at the MEP of onion.

Technological and extension support

A National Horticultural Research Development Foundation has been set up by NAFED to undertake research on development of varieties of onion suitable for cultivation in different agro-climatic regions of the country as well as the development of suitable production practices. NAFED has also set up units for the production of bio-fertilizers and rhizobium culture. Besides NAFED, other public research agencies are also involved in technology development and upgradation for onion.

The technologies and package of practices developed are passed on to the producers through an extensive system of extension. Seed, and, at times, other critical inputs are provided to farmers by NAFED. Plant protection operations have also been undertaken to provide protection against pest and disease infestations. Technical know how is extended to farmers to improve production and productivity. Seed production is undertaken by the NAFED sponsored National Horticultural Research Development Foundation and seed is sold by NAFED under its own name.

External trade support

From 1974-75 to January 1999, the NAFED was the sole canalizing agency for external trade and exports of onions from India. In January 1999, the new export - import policy of the Government of India introduced certain changes in the system of onion trade by including some other agencies as additional canalizing agencies for onion trade. These were the Maharashtra Agricultural Marketing Board and the Gujarat Agro Industries Corporation. In December 1999, the list was extended with the inclusion of Karnataka State Cooperative Marketing Federation, Andhra Pradesh Marketing Federation, Spices Trading Corporation, Limited, National Consumers Cooperative Federation, and Andhra Pradesh State Trading Corporation as canalizing agencies for onion exports. The reasons for allowing other agencies to enter into the canalized exports of onion is that the Government does not want any agency to acquire a monopoly position in this respect and also to facilitate the easy procurement, distribution and exports of the commodity from the widely distributed producing centers of the country. However, NAFED continues to be a monitoring agency.

Each canalizing agency is allocated a quota for exports. An inter-ministerial group comprising representatives of the Ministries of Commerce, Consumer Affairs, and Agriculture and NAFED decide the quotas for exports to be allocated to each canalizing agency. These quotas are decided for varying periods of say 15 days to a month and generally not for a long period.

The share of NAFED in the total quantity exported is around 50 per cent, with the remaining being shared by the other co-canalizing agencies. Having been responsible for exports of onions since its inception, NAFED has been able to establish markets for Indian onion abroad, which is evident from the increasing volume of onion exports.

NAFED has set up modern state-of-the-art storage facilities in Maharashtra, Gujarat and Tamil Nadu near its major procurement centers. Onions require storage facilities that require sufficient inflow of fresh air. Consignments are packed in hessian bags which allow air to pass through. Export consignments meant for long distance are transported by NAFED's associated shippers in specially equipped sea vessels in which air is blown in storage areas through fans and blowers.

India grows three types of onions – red, white and yellow. The bulk of the country's exports are of the red variety. Generally only 'A' grade onions are exported. Grading is done manually on the basis of bulb size by trained people deployed by NAFED who are well versed with the requirements of different export markets. Occasionally 'B' grade onions are also exported but the market for such onion is only Dubai. Tastes and preferences of consumers vary and the Bangalore rose variety, a small variety of onion, is preferred in and exported to Singapore and Malaysia.

Marketing channels

In the case of private trade in onions for domestic consumption, producers sell onions to commission agents in assembling regulated markets which are now in operation extensively throughout the country. The commission agents sell the onion to sub-wholesalers or directly to retailers, who in turn, sell to the consumers.

A second channel is the cooperative channel in which producers market their onion through cooperative marketing societies at the village level. NAFED and the other canalizing agencies procure their requirements from cooperative societies and rarely buy from commission agents or wholesalers in markets. This benefits the small producers as they collectively receive a better price for their product.

Conclusions and Recommendations

The exports of onions from India have been a success story. The country has been able to export large quantities of onions after ensuring that the domestic requirements are met. The canalizing agencies, especially NAFED, have been able to establish markets for Indian onions abroad as they take good care to maintain the quality of the produce for the export market. For this purpose, storage and grading facilities have been created. Large scale facilities created for packaging of onions by the exporting agencies help in the quick handling of export consignments. However, while markets have been established for Indian onions abroad (India exported onions to 36 markets in 1997-98), exports are concentrated to neighboring countries in South and South East Asia and the Middle East. In order to improve unit value realization, it is necessary to tap the potential of markets in

the European Union and other developed countries. These countries import large quantities of onion and it is important that India should quickly try to penetrate these markets. This will require the production of onions possessing the traits desired by consumers in these potential markets but the Indian research system is well equipped to develop such varieties.

References

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Table 1: Area and production of vegetables in India

Year	Area ('000 ha)		Production ('000 mt)	
	Onion	Vegetables	Onion	Vegetables
1991-92	331.8	5593	4705.8	58532
1992-93	380.2	5045	5704.7	63806
1993-94	367.5	4876	4006.4	65787
1994-95	378.6	5013	4036.1	67286
1995-96	395.5	5335	4080.0	71594
1996-97	410.0	5515	4180.0	75074
1997-98	340.0	5607	3140.0	72683
1998-99	480.6	5866	5466.7	87536

Source: Indian Horticulture Database Millenium 2000, National Horticulture Board, Ministry of Agriculture, Government of India, Gurgaon, India. 2000.

Table 2: State-wise area and production of onion in India (TE 1998-99)

State	Area ('000 ha)	Production ('000 mt)
Andhra Pradesh	27.03	392.67
Bihar	19.87	159.67
Gujarat	30.73	837.37
Karnataka	84.80	486.13
Madhya Pradesh	21.30	295.53
Maharashtra	87.97	981.20
Orissa	45.27	270.00
Tamil Nadu	29.07	246.57
Uttar Pradesh	28.67	319.37
Others	35.50	273.73
India	683.53	6702.23

Source: Indian Horticulture Database Millenium 2000, National Horticulture Board, Ministry of Agriculture, Government of India, Gurgaon, India. 2000.

Table 3: Onion exports from India

Year	Quantity (tones)	Value (000 rupees)	Unit Value Rs./tonne	Unit Value Dollars /tonne
1980	193700	277600	1433	181
1981	169800	294300	1733	193
1982	181300	311700	1719	178
1983	181500	354200	1952	189
1984	251100	543000	2162	182
1985	157500	292100	1855	152
1986	265900	584600	2199	172
1987	141000	421300	2988	230
1988	214200	641700	2996	207
1989	214200	641700	2996	207
1990	240200	908800	3784	211
1991	370900	1495900	4033	165
1992	271900	1193600	4390	143
1993	357100	1826700	5115	163
1994	401000	2050000	5112	163
1995	351000	2310000	6581	197
1996	427000	2650000	6206	175
1997	333000	2020000	6066	163
1998	216000	1760000	8148	194

Table 4: Area planted to onion in India (million hectares)

Year	Area
1980-81	0.25
1985-86	0.28
1990-91	0.30
1995-96	0.40
1998-99	0.48

Table 5: Major importers of fresh onions from India – 1997-98

Country	Quantity (tonnes)	Value ('000 Rs.)
Malaysia	78376	509586
UAE	85532	466339
Singapore	32441	302055
Sri Lanka	57208	288731
Bangladesh	50035	259739
Saudi Arabia	13114	92264
Mauritius	5096	29257
Kuwait	5067	26980
Bahrain	1633	12873
Maldives	807	4365
Others	3691	32421

Total number of markets: 36

Source: Export Statistics for Agro and Food Products, India, 1997-98. Agricultural and Processed Food Products Export Development Authority (APEDA), 1999.