

## II. POTENTIAL FOR AGRICULTURAL COOPERATION BETWEEN INDIA AND JAPAN

A major objective of India's development strategy is to ensure a progressive increase in the production of foodgrains and commercial crops. In the background of a steep increase in the price of imported energy and the resulting strains on her balance of payments, India cannot afford to depend on imports of food and other agricultural products to meet the requirements of her growing population. Indeed, the state of the balance of payments is such that export of selected agricultural commodities has to play an important role in ensuring viability of external payments.

The country is currently self-sufficient in food. However, its economy is still vulnerable to fluctuations in weather conditions. Thus a major effort has to be made both to increase and to impart a greater measure of stability to agricultural production. To achieve these objectives, massive investments are needed in irrigation, electricity and fertilisers. These happen to be fairly capital intensive sectors. Large investments in these sectors are envisaged at a time when the country has also to invest massive amounts in the exploration and development of petroleum and coal. India currently saves nearly 22—23 per cent of her gross national product which is fairly impressive when considered against the background of her low per capita income of about \$ 200. India is determined to rely to the maximum extent possible on her own resources to finance the needed investments. However, taking into account the high capital intensity of the key sectors in which these investments have to be made, there is considerable scope for import of capital for supplementing India's domestic efforts at resource mobilisation. Thus programmes of development assistance—both bilateral and multilateral—can play an important role in increasing the supply of investible resources for the rural sector.

It has to be recognised that the bulk of investments in agriculture essentially involve expenditure on local costs and the scope for imported inputs is somewhat limited. Thus increased international support for agriculture and rural development must also be accompanied by willingness to provide assistance for finance of local costs. This is, however, an area where policies of donors have in recent years become more restrictive.

Japanese aid to India has remained stagnant at about 30 to 32 billion yen (excluding debt relief grant of an annual average of yen 2.6 billion) over the last few years. In accordance with the OECD/UNCTAD decisions that donor countries should bring up the transfer of resources to 1% of their GNP and ODA to 0.7% by 1981-82, the Government of Japan has pledged that they would double their ODA within three years commencing from 1978. Japan has also set the medium term target of increasing the ratio of ODA to GNP and of more than doubling the ODA between 1981 and 1985 over the actual disbursements during the past five years. In spite of these commitments, Japanese assistance to India has not been enhanced and has not kept pace with the proportionate increase in their aid programmes to the rest of the world. In the case of Pakistan it has been doubled. Besides, on the question of improvement in terms of aid, while the UNCTAD resolution asked for a target of 84% grant element (the target fixed by DAC), Japanese aid has a grant element of about 60% only (excluding grant aid). Due to India's comfortable exchange position, the Government of Japan has not pledged any commodity assistance since 1979-80. As the steep rise in crude oil price has drained India's foreign exchange reserves, the resumption of commodity assistance needs to be considered. Although some of the stringent terms for aid have been relaxed in recent years, credits remain tied not only to projects but also to the source of supply viz. Japan or the developing countries leaving India with practically no options and delaying the utilization of the credit. The procedure, because of the project implementation schedule, also makes project and a slow type of disbursement aid.

As Japan is placing a premium on agricultural development in developing countries, increase in aid could be channelled into agricultural projects and programmes where Japanese interest has hitherto been limited. Thus, there is scope for increasing assistance for agriculture, irrigation and rural development, liberalization of the terms and conditions as well as simplification of procedures.

Apart from increased investments, Indian agriculture needs considerable technical inputs as well as institutional reforms to enable farmers to raise their productivity. It is necessary to develop new technologies which can raise

the productivity of scarce resources of land and water. Research, education and extension have played a major role in modernising India's agriculture in the last fifteen years. However, a lot remains to be done. An important task is to ensure that the new technology can be harnessed successfully by millions of small and marginal farmers. To that end, it is necessary to devise appropriate arrangements for organisation of extension services, supply of inputs at reasonable prices, efficient water management practices, an effective credit delivery system and a marketing structure which seeks to provide remunerative prices to farmers as an incentive to enhanced output. Of course, agricultural technologies cannot be readily transferred from one country to another. There must be sizable investments in adaptive research to ensure that available technologies are suited to the natural endowments, social, cultural and economic conditions in specific countries. Even then, technologies developed in a country like Japan which is characterised by a scarcity of land and a very small size of average holdings are bound to be of considerable interest and relevance to a country like India which also suffers from small size of farms. Thus strengthening of technical cooperation between India and Japan can be of considerable help in modernisation of India's farm economy.

As mentioned above, export of agricultural products has been assigned an important role in India's foreign trade strategy for the Sixth Plan. Although, India's domestic requirements of agricultural products are bound to increase overtime, the development strategy must also facilitate emergence of export surpluses to pay for the rising import bill. In the long run, Indian agriculture has the potential to generate sizable export surpluses of foodgrains even though immediate prospects are not certain. However, for several agricultural products, of which Japan happens to be a net importer, it should not be difficult for India to produce more with an eye on the Japanese market. Cooperation between India and Japan can help to expand the production and export of suitable agricultural products from India to Japan.

The foregoing account brings out that there is vast scope for expanding cooperation between India and Japan with a view to modernisation of India's rural economy: capital assistance, technical cooperation as well as expansion of trade flows constitute major elements of new design of cooperation. Thus Japanese capital, technology and access to Japanese markets can help to accelerate the pace of India's agricultural development. Subsequent sections of this paper seek to further develop this theme. In so far as the instability of food prices has played an important role in accentuating inflationary pressure in the world economy in the last decade, increased production of food and other agricultural commodities in a country like India can make an important contribution to international economic stability even if India does not immediately export large quantities of foodgrains. Japan, being a net importer of foodgrains, is vitally interested both in security of supplies as well as in stability of prices. Thus cooperation in the development of India's agricultural economy can turn out to be mutually beneficial to the two countries.

In this background, it is encouraging to note the following statement on agriculture made by the Japanese Prime Minister at the Cancun Summit:

"I wish to confirm that Japan will maintain the policy of encouraging the self-reliant efforts of the developing countries in this field and of extending to them as much cooperation as possible regarding food and agriculture as the most basic field in the development programme".

In the same statement, he also stated that Japan intended to expand assistance in food, rural and agricultural development, forestry and fisheries and laid emphasis on comprehensive development cooperation in the agricultural field.

## 1. POTENTIAL FOR TECHNICAL COOPERATION BETWEEN INDIA AND JAPAN IN THE FIELD OF AGRICULTURAL RESEARCH & EDUCATION

Japan's export of technology is now almost at par with its import of technology. Japan has been imparting technology extensively to the newly industrialized countries. It is now stretching out west wards to cover the ASEAN region. As far as India is concerned, Japan has been transferring elementary and medium range technology in several areas. There has, however, been very little transfer of sophisticated technology.

Application of science and technology to agriculture has been responsible for India's progress. While agricultural research and education has made considerable progress in India in recent years, there are several areas in which the technologies developed by Japan are more advanced and could be of interest to India. For instance the problem of energy management for agriculture as well as industries has attained crucial importance recently in view of the shortage of fossil fuels. Alternate technologies have, therefore, to be developed in a time bound programme by mutual cooperation between developed and developing countries. With this objective it is necessary to set up an institutional mechanism to accelerate the progress of scientific and technological exchanges reinforced by a programme of practical training in specialised fields/areas.

The priority areas for fruitful cooperation between India and Japan in the field of agricultural research and education are listed below :—

1. Rice improvement technology;
2. Grassland development and silage making;
3. Soil conservation and watershed management;
4. Industrial pollution and pollution control;
5. Fisheries Research and technology;
6. Sericulture;
7. Micro-organic technology;
8. Plant protection research and technology;
9. Agricultural engineering;
10. Post graduate agricultural education.

A brief outline of the specific fields for cooperation in these areas is presented. Specific cooperation involving exchange of scientists (2-4 man years) in any of the following areas could be considered.

### 1. Rice

(i) *Water management in rice fields*—This includes regulation of water with reference to crop growth stages. However, the entire system practised by Japan is so precise that it may not be applicable to India where complete water control under rainfed situation is almost impracticable. Some of the technology can be used with suitable modifications in India which will greatly increase crop productivity as well as water utilization. Such collaboration is possible with the university of Tokyo.

(ii) *Rice breeding*—Japanese scientists are reported to have developed rice varieties of such desirable characteristics as high protein and high photo-synthetic efficiency under cold temperatures and low light conditions. Collaboration in breeding similar varieties under Indian conditions would be of considerable interest.

(iii) *Rice based composite culture systems* :—India can benefit from Japan's expertise on mixed farming system of rice with fish, ducks, pigs etc., which are efficient from the view point of organic recycling.

(iv) *Integrated nutrient supply and management*—Rice is the major crop in Japan and India. Under its peculiar swamp culture, nutrient management poses serious constraints to rice production. Advance research studies are being carried out in this field in both the countries. Emphasis is on efficient methods of application of fertilisers and

use of bio-fertilisers for adopting effective management of nutrients in rice-paddies. Bilateral collaboration can be effected gainfully between ICAR (CRR) and Japanese Agriculture, Forestry and Fisheries Research Council (National Institute of Agricultural Sciences, Tokyo).

## 2. Grassland development and silage making

Grassland development and silage making are considered important in India and Japan. Small holdings and sedentary shallow soil situations occur in both countries and present similar problems in developing grassland. Under monsoonic conditions, rank growth of vegetation during the rains and sparse or no green vegetation in other months is a major constraint in the livestock development programmes. Japan has done pioneering work in these areas particularly at its National Grassland Research Institute, Nisi—Nasuno—michi (Tochigi). Scientific collaboration between ICAR (IGFRI) and Japanese Agriculture, Forestry and Fisheries Research Council (Ministry of Agriculture and Forestry) will be mutually beneficial.

## 3. Soil Conservation and Watershed management

The geophysical conditions of Japan and its soils of volcanic origin are highly prone to erosion. Therefore, intensive research on soil conservation and watershed management has been taken up to evolve technology in these areas. The National Institute of Agricultural Engineering, Hiratsuka, Japan has undertaken monitoring of hydrological changes in the watersheds, using sensitive methods of Radon—222 as tracer, for surface water and ground water flow/fluctuations. Liquid scintillation spectrometer determines Radon—222 concentration in the water samples. Hence collaboration between IARI (WTC) and soil conservation Research Institute (ICAR) and the National Institute of Agricultural Engineering (Japan) will be fruitful through exchange of visits, experiences, equipments etc.

## 4. Industrial Pollution and pollution control

Japan is a highly industrialised country. Industrial effluents and stack gases pose serious pollution problems especially of heavy metals. In recognition, intensive studies are being carried out to monitor pollution problems, using sophisticated instruments and methods. In India, industrial pollution is assuming serious proportions. It is considered worthwhile to develop bilateral collaboration between ICAR (IARI/NRL) and Japanese Agriculture, Forestry and Fisheries Council (National Institute of Agricultural Sciences, Tokyo) to avail of the Japanese experience, sophisticated instruments and exchange visits.

## 5. Fisheries Research and Technology

Japan, a leading fish producing country in the world has developed commercially viable technologies in various fields of fisheries science. Some of the broad areas in which India can benefit by cooperative programmes with Japan are given below.

(a) *Cage culture of fishes* : Cage culture of both freshwater and marine species of fishes is relevant to India. These new systems of intensive production of fishes in net and cage enclosures in reservoirs, bays and coastal coves would provide extensive employment opportunities as well as enhance the production of fish without disturbing the conventional use of fisheries resources.

(b) *Processing technology for Accelerated Freeze Drying of Shrimps*.— Accelerated Freeze Drying (AFD) of shrimps is an area in which India would like to import technology from Japan, to begin with, for demonstration purposes. A scheme has been prepared by the MPEDA for assistance under "Yen 30 billion aid". The scheme contemplates establishment of an AFD Unit for demonstration purpose in the Integrated Fisheries Project, Cochin.

(c) *Culture technology for shrimps and other Marine organism*.— Shrimps and fish culture are gaining considerable importance in recent times. Commercially important penaeid prawns in India breed almost throughout the year and the post-larvae of these can be collected from the coastal surf region. However, owing to seasonal fluctuations and the heavy demand likely to be generated consequent on the large scale culture operations that are to be undertaken, seed collection from natural resources cannot be wholly depended upon and will not be adequate for extensive prawn farming. Therefore, induced maturation and prawning will have to be resorted to. This can be achieved only through a proper understanding of their reproductive physiology. Similarly, rearing of these larvae through the various initial stages would also require considerable knowledge of their nutritional and physiological requirements.

Similarly, an understanding of the nutritional requirements of organisms is very essential in order that culture operations are successful. This is particularly true in the case of early stages of marine fish as maximum mortality is encountered in the early larval stages. Larval and post-larval stages are more vulnerable and require the greatest attention if satisfactory survival rates are to be obtained.

At present very little is known of the nutritional needs of many of these culturable prawns and fishes. Therefore, to study the spawning behaviour and factors influencing it and to evolve suitable foods using cheap and easily available ingredients, as also to work out optimal level of feeding to ensure their maximum growth and survival it will be necessary to develop suitable technologies.

CIFRI and CMFRI have successfully demonstrated culture technology in open ponds drawing saline tidal waters. Induced maturation of *penaeus monodon* was successfully tried by CIFRI. Breeding of prawn is a tried technique with CIFRI, CMFRI and CIFE. Considerable success has been recorded in Kerala on rearing of various metamorphic stages of prawn to produce stockable material with formulated feed based on squilla meat.

However, Japan has a record of advanced intensive culture of marine prawns with production at the rate of 20 tons per hectare. The formulated balanced feed, breeding and culture on intensive operations, are aspects which could be studied with Japanese experts to boost the Indian prawn culture industry.

(d) *Eel culture*.—Japan has made considerable progress in eel culture. *Anguilla Japonica* is the species cultured in Japan. *Anguilla* species are abundantly available in India. They are reportedly similar to the japonica species. The Central Marine Fisheries Research Institute has undertaken projects for culturing of eel. Processed Indian eels exhibited in seafood fairs in Europe attracted trade attention and there have been enquiries for supplies. But India does not have a production and supply base. Japanese technology for culturing and processing of eels would therefore be very useful.

(e) *Pearl Oyster culture*.—Achievements of CMFRI in developing indigenous technology of pearl oyster culture has been recognised. Japan is still the leader in culture pearl industry with its immense experience in the field. This calls for a fruitful collaboration with Japan in regard to studies on farming pearl oyster, controlled breeding of pearl oyster, production of spat under controlled captivity conditions, refinement of raft culture and culture pearl technology and large scale production of shell beads as nuclei from indigenously available shells.

(f) *Sea weed culture*.—Marine algae or sea weed are commercially important directly as human food and livestock feed, as fertilisers and as raw material for industry pertaining to specific chemicals such as sodium alginate and agar-agar. Chemical industries based on marine algae have been well established in USA, UK, France, Norway, and Japan. Culture experiments on *gracilaria* yielded encouraging results in India. Collaboration with Japan may help in establishing economically feasible production units to support this much sought after industry in India as well as in the foreign market.

(g) *Deep Sea fishing*.—With the acquisition of the exclusive economic zone of 200 miles the challenges to the country are immense in terms of exploration and exploitation of marine wealth. Development plans in the area could considerably benefit with the participation of Japan and sharing of their expertise.

(h) *Processing of sharks*.—Since a large number of sharks will be landed along with tuna and other fishes from the deep sea, processing could include conversion of shark meat into urea fillets—an area in which the Japanese specialize—the liver into shark liver oil, the skin into tanned leather and the fins into processed fin rays. South-East Asia offers a good market for sharks.

(i) *Processing of trash fish*.—Deep sea fishery will also bring along with it a number of varieties of cheaper fish and trash fish. Expertise from Japan can help in the production of value added products by sophisticated processing of these cheaper varieties.

(j) *Processing of tuna*.—Japan can assist India in the canning of tuna. Japan could supply aluminium cans for packing in India. Apart from this, Japanese know-how in the canning of tuna in various media could also be valuable.

(k) *Manufacture of fishing equipment*.—Technical improvement could also be effected through technical collaboration with Japan in the manufacture of fishing crafts and gears and related equipment. A study to identify suitable projects for such joint ventures could prove most helpful.

(l) *Construction of fishing vessels*.—Mazagaon Dock and Goa Shipyard have capabilities of building fishing vessels. It takes about three to four years to build a vessel. Upgradation of their capabilities to build efficient deep-sea fishing vessels quickly is an area requiring attention from the long term point of view. Japanese know-how in this area on the basis of long-term cooperation would be invaluable.

Thus Indo-Japanese cooperation is possible in exploring, surveying, deep-sea fishing, processing and export of diverse marine products and in manufacturing equipment and fishing vessels.

#### 6. Sericulture technology

Sericulture technology has made considerable advance in Japan in recent years. This also covers rearing of silkworms on an artificial diet. At present young silkworms are reared on an artificial diet in the joint rearing houses and then on mulberry leaves in sericulture households. This has greatly contributed to increased sericulture productivity.

Furthermore, studies on mulberry cultivating techniques suitable for any type of soil and densely planted fields, along time preservation of mulberry leaves and fully automatic raw silk reeling techniques are some of the other spheres of progress.

Collaboration in the field of sericulture can help in adoption of these modern techniques in India which will contribute to increased sericulture productivity in the country. Such collaboration can be had with sericulture Experiment Station, Yatabe, Ibaraki 305 Japan and Institute of Silkworm Genet., Kyushu University Fukaoke 812, Japan.

#### 7. Micro-organic technology

In the case of micro-organic technology the development of enzyme technology and fermentation technology has revolutionised the medicine and food industry. The development of fermentation technology has enabled Japan to convert the naturally abundant carbohydrates to a variety of food materials like sugar, glucose, alcohol, acetic acid, siren paper etc. at cheaper rates. Further, the efficiency of Japanese fermentation technology to produce alcohol from tapioca, potato, sweet potato etc. is double that in other countries.

India is also interested in obtaining technology for production of drugs including corticosteroids, dexamethasone and betamethasone, starting from plant material like diosgenin, hecogenin solasedin etc. and basic technology for dihydroergocristine methane sulphonate.

#### 8. Plant Protection Research and Technology

##### *Insect pest management:*

(i) *Disease and insect pest forecast programme*.—An elaborate system of disease and insect pest forecasting is practised in Japan. The objective of this system is to serve the farmers with technical guidance for adopting pre-arranged application schedule of pest control programme. This programme makes the pest control measures rational by:

- (a) Finding out some precursors of pest outbreaks and serving farmers with advance notices.
- (b) Forecasting population densities of pests/or damage caused by them and serving farmers with information on whether or not the application of pest control measures are necessary.
- (c) Forecasting the appropriate time for control action when necessary and serving farmers with such information.

Similar disease and pest forecasting programmes can be developed and suitably adopted in India in collaboration with Japan. This will go a long way not only in reducing the losses caused by disease and insect pests particularly to rice crop but also in bringing down the use of pesticides and reducing environmental pollution with harmful pesticides. Such collaboration is possible with the National Institute of Agricultural Sciences, Kannondai 3-1-1, Yatabe, Tsukuba Ibaraki 305, Japan.

(ii) *The use of sex pheromones in insect management*: Japanese agricultural entomologists have researched on the use of synthetic sex pheromone as a tool in insect pest control in three ways: mass trapping, communication disruption method and application for forecasting. These methods have experimentally succeeded in control of several insect pests.

Synthetic sex pheromones can be adopted as a tool of pest management in case of several major insect pests of rice, sugarcane and cotton in India, which are otherwise difficult to control at present. Collaboration in this field is feasible with National Institute of Agricultural Sciences (Kannondai 3-1-1 Yatabe, Tsukuba Ibaraki 305, Japan).

(iii) *Breeding of plant hoppers and leaf hoppers on synthetic diet under controlled conditions*: Japanese entomologists have made considerable advance in mass culturing of leaf hoppers and plant hoppers for many generations on synthetic diet. Leaf hoppers and plant hoppers are the most important group of insect pests affecting rice crop in Japan as well as in India. Use of this technology in India in collaboration with Japan will facilitate research on all aspects of leaf hopper and plant hopper through bioassay studies. The brown plant hopper *nilaparvata lugens* has assumed the status of the most destructive pest of rice crop in India in recent years. Collaboration with Japanese scientists will help in finding out a way for an effective control of this pest. Such collaboration is possible with National Institute of Agricultural sciences Kannondai 3-1-1, Yatabe, Tsukuba Ibaraki 305, Japan.

#### *Disease Management*

(1) *Identification of pathogenic races in blast pathogen, pyricularia oryzae*: Japanese scientists jointly with U.S. scientists have established International Differential Set for identification of pathogenic races in *pyricularia oryzae*, casual fungus of blast, a major disease of rice. They are now developing an improved method of identification of races of blast pathogen by employing differentials of known genetic constitution and have proposed a new method for differentiating blast fungus races (Yamada, M. et al. 1976). This work is being done at the :

- (i) Central Agricultural Experiment Station Konosu, Saitama, Japan.
- (ii) National Institute of Agricultural Sciences, Mirastsuka, Kanagawa.

The above mentioned Institutes in Japan can cooperate with Indian scientists at the Central Rice Research Institute and other institutes in developing suitable set of differential varieties to differentiate pathogenic races of blast fungus in India.

Amongst the Asian countries, Japan has the best facilities for large scale manufacture, formulation, marketing and application technology of agrochemicals (insecticides, fungicides and plant growth regulators). Japan is also a leading exporter of pesticides of these chemicals amongst the Asian countries.

The best field for technical cooperation between India and Japan would be "pesticides" where Japanese advancement is on a much higher level and where research and educational facilities are available in almost every university.

The cooperation could take the shape of:—

- (a) Exchange visits of senior level workers for 4—6 weeks;
- (b) Training of junior level scientistis in selected topics for 6—12 months;
- (c) Exchange of scientific data, samples and testing facilities;
- (d) Collaborative work on some problems having wider application such as rice blast disease, new varieties, new control measures and chemicals.

#### 9. Agricultural Engineering

(i) *Post Harvest Technology*.—Post harvest technology is another aspect where India can learn from the advances made in Japan. The prevention of wastage of agricultural products, the overall efficient energy utilization in drying and utilization of by-products, extraction of bran oil and use of deoiled bran for human consumption other than cattle feed are some aspects of interest to India. Collaboration with Agricultural Engineering Department of Tokyo University, Tokyo and MS Satake Engineering Co. Ltd. 7-2 Soto-kanda, 4 Chome, Chiyodakee, Tokyo, Japan in these areas may be desirable.

(ii) *Mechanised tools for rice culture*.—The design and development of rice transplanters, power weeders, mud ball applicators, milling and processing equipment for rice could be accelerated in collaboration with Japan International Cooperation Agency.

#### 10. Post-graduate Agricultural Education

Collaboration in post-graduate Agricultural Education with Japan would be worthwhile since it will have a wider and multiplier effect. In several areas such as crop physiology, photo-synthesis, agricultural chemicals, bio-technology and bio-mass conversion, Japan has developed advanced technologies and India could with advantage imbibe some of these. In such collaborations, both the ICAR Institutes and Agricultural Universities could be involved from the Indian side.

## 2. TRADE IN AGRICULTURAL ITEMS

Japanese trade structure is under going a transformation for several reasons: There is mounting criticism in Western Europe and the United States that Japanese trade is export oriented and has built-in artificial walls blocking imports from other countries. Japan plans to meet these accusations by increasing imports rather than restricting exports. Japan has been fighting against protectionism and appealed at the Ottawa Summit for North-South dialogue free from contention as it realizes that confrontation between the industrialized and developing countries was one of the major dangers facing the world which could only be alleviated by the recognition of the inter-dependence of the world and division of labour. It has drawn up a phased programme for the vacation of uneconomic, pollution-causing, high-energy and resource-consuming production lines; the consumption habits and the living-style of the people are changing and they can no longer be satisfied by indigenous production. All these considerations entail liberalisation of Japan's imports, implementation of the MTN agreements and greater substitution of intermediary goods in place of raw materials. The simplification of the distribution systems, as more super markets do their own purchasing directly instead of relying on the trading houses, is also a factor in encouraging imports.

The changing trends in Japan's import policies fit in with India's export strategy where more and more emphasis is being placed on exporting value-added, processed items rather than on raw materials. Good potential therefore, exists for taking promotional measures for expanding Indo-Japanese trade. Import of food products to satisfy its people's requirements forms a major part of Japan's import bill and to accomplish this cheaply, there exists a vast future potential for cooperation in agricultural trade.

Over the span of the last thirty years, India's exports to Japan declined drastically. In 1951, India's share in Japanese imports accounted for 8.5 per cent and Japan exported 7.5 per cent of its total exports to India. In 1979-80 however, Japan's imports from India had fallen to less than 1 per cent while India's exports to Japan were about 12 per cent of its total exports. Japan's import trade has expanded considerably but India's share has declined progressively over the years and the trade surplus which India enjoyed for several years level led of during 1980-81 placing a severe strain on its increasing balance of trade deficit. India is desperately trying to improve its trade position. The complementary nature of the two economies should provide the necessary incentives. The agriculture sector offers one such aspect of the complementarity. The agricultural trade between the two countries is given at Tables I and II.

Table—I  
*India-Japan Agricultural Trade—Exports to Japan*

Commodity	Unit of Quantity	(Unit \$ 1000)					
		1979		1980		1981	
		Quantity	Value	Quantity	Value	Quantity	Value
Shrimps, Prawns & Lobsters (Crustacea & Molluscs)	MT	39,090	251,158	35,350	193,962	40,368	245,384
Edible Nuts	MT	4,271	16,842	2,108	11,381	941	6,254
Coffee, Cocoa Tea & Spices	MT	7,955	22,977	10,321	28,935	16,432	21,758
Feedstuffs	MT	21,359	2,513	9,154	1,407	12,910	2,020
Tobacco	—		12,367		9,668		8,929
Textile Materials	MT	14,283	30,336		24,453		18,789
Raw cotton	MT	13,790	28,352	13,885	24,063	10,995	18,648
Wood	KCM	3	5,511	6	13,066	1	4,011
Other animal and vegetable raw materials	—		29,698	—	31,510		29,614

Table—II  
*India-Japan Agricultural Trade—Imports from Japan*

Commodity	Unit of Quantity	(Unit \$ 1000)					
		1979		1980		1981	
		Quantity	Value	Quantity	Value	Quantity	Value
Foodstuffs	—		52		52		29
Yarn	MT	6,883	22,752	7,230	21,025	10,141	33,441
Pearls	KG	4,690	3,519	2,652	2,693	4,221	5,632
Paper & Paper Products	MT	4,543	6,012	9,663	9,290	4,805	7,502



## (a) Food Products

There are prospects for improving the quantum of India's trade in food items. Since the 1970s, Japan's import of food products had shown a steady growth. Food items are predominant in India's exports to Japan accounting for 27.15 per cent of the total exports in 1981. Consequent on the increase in Japanese national income and personal affluence, the consumption habits of the Japanese underwent a change which in turn has resulted in soaring food imports. Most of these imports are from the West. India offers several items of food relatively cheap and should, therefore, be able to make a bigger dent in Japan's food market. An item-wise analysis of these imports is as follows:—

(1) *Marine Products*: The Japanese are basically a fish eating people and their demand is met largely by imports. 98 per cent of India's export consist of shrimps. Exports of lobsters and cuttle fish have shown a slight increase. Table III shows the export of marine products to Japan for the last five years.

Table—III  
Export of Marine Products to Japan for past five years

Items		1976-77	1977-78	1978-79	1979-80	1980-81
Frown Shrimp	Q:	27534	27703	36279	35686	38620
	V:	11823.34	10893.43	15823.64	16412.80	16411.88
Frozen Cuttle Fish	Q:	503	455	528	958	153
	V:	92.70	74.35	118.35	331.69	35.49
Fresh/Frozen Fish	Q:	94	163	330	96	206
	V:	14.05	20.80	62.81	23.31	21.14
Frozen Lobster Tails	Q:	33	112	367	125	159
	V:	17.40	71.53	281.34	99.00	75.17
Others*	Q:	656	298	259	114	236
	V:		16.93	44.14	51.18	31.83
Total	Q:	28820	28731	37763	36979	39374
	V:	11967.00	11077.04	16329.79	16917.98	16525.51

Q: Quantity in tonnes

V: Value in Rs. lakhs

\*Others include items like frozen squids, frozen froglegs, fish meal, canned shrimp, canned sardines, dried shrimps, dried fish, shark fish, fish maws, sea shell, sea weeds, prawn pickles, etc.

Japan's total imports of shrimps in the calendar year 1981 were 168,326 tonnes. India exported 40,368 tonnes and its share in Japan's total imports in that year was 24 per cent. Since then the quantum of Indian exports of shrimps to Japan as well as India's share in Japan's total imports have been rising touching 38,620 tonnes in 1980-81, the highest on record. The increase in value was not, however, commensurate with the increase in quantity. The value remained on the same level of Rs. 164.13 crores, achieved in 1979-80. The average unit value realization of the exports declined sharply from Rs. 45.99 per kg. in 1979-80 to Rs. 42.50 per kg. in 1980-81. A fall in the Japanese market was due to the weakening of the yen combined with contraction in consumption. The Japanese market was quite unsteady and the prices fluctuated widely in 1980-81. In view of the fluctuations, ways and means need to be considered for the stabilization of trade in marine products.

As India has a large variety of fish in its waters, apart from traditional items mentioned in Table III scope exists for identifying and diversifying exports of marine products of the following species:—

1. Elasmobranchs (sharks)
2. Eels
3. Cat fishes
4. Perches
5. Red mullets
6. Polynemids (Indian salmon)
7. Sciaenids
8. Caranx
9. Pomfrets
10. Mackerel
11. Seer fish

12. Tunnies (Tunas)
13. Soles
14. Penacid prawns
15. Lobsters
16. Other Crustaceans
17. Cephalopods (squids & cuttle fish)
18. Sardines
19. Sea-weeds
20. Frog legs

Japan could send an import mission to India for industry level contacts to promote imports of the above mentioned items into Japan.

(2) *Tea*: Tea is exported in bulk and in retail packed form. During 1970, India exported 914 metric tons amounting to US \$ 3.848 million. Generic promotion of tea would help in enlarging this potentially big market. The import of instant tea in Japan is estimated at 48 tonnes (1981) out of which India's share is 15.5 tonnes. There are possibilities for increasing the market share of this item.

(3) *Coffee*: Japan is a traditional tea drinking country but has lately taken to consuming coffee. The import of coffee is, therefore, of recent origin. In the year 1976, the per capita coffee consumption in Japan was 1423 grams. The entire requirement is imported. Japan's import of coffee has risen from 1,09,409 tonnes in 1975 to 1,82,075 tonnes in 1981. Over this period the imports from India have risen from 203 tonnes to 6226 tonnes. In 1981, India's share of the Japanese market was 3.4%. The other major suppliers are Brazil, the Ivory Coast, Uganda and Columbia.

About 40 per cent of the coffee consumed is of the instant type. It is in the export of coffee in this form that future possibilities exist. If the response is favourable, negotiations could be conducted by the Coffee Board for an agreement on a long-term basis regarding the quantum and other terms. This is possible, particularly, as customs duty on coffee has been removed. Roasters and packers in Japan could cooperate with the Coffee Board in expanding trade in coffee.

(4) *Fruits and Vegetables*: India's exports of processed fruits and vegetables to Japan have remained negligible. A beginning was made in 1978-79 with the export of 20 MT of mango pulp valued at Rs. 1.0 lakh, 144 MT of mango chatney valued at Rs. 10.0 lakhs and 492 MT of dehydrated garlic valued at Rs. 10.0 lakhs. Even these exports are showing a declining trend as it evident from the figures below:

Year	(Qty. M. Tonnes/Values. lakhs)	
	Quantity	Value
1978-79	492.0	82.44
1979-80	126.1	17.06
1980-81 (provisicnal)	210.0	21.91

The cause of the declining trend can be attributed to competition from China, Taiwan and the USA.

Export of mango pulp from India during 1978-79 was 5869 MT, but Japan imported only 20 MT. Japan is selling mixed fruit beverages in substantial quantities in the international market. There is, therefore, great scope for export of tropical fruit pulp for conversion into ready to serve beverages and for use in fruit mixes, ice-cream and yoghurt and in frozen form for baby foods. Mango pulp is particularly in great demand. Exports of mango chutney can also be enhanced. Guava is another tropical fruit which can be processed as canned fruit and in the form of pulp. India produces about 8 lakh tonnes of guavas.

Another item of interest could be tropical fruit cocktails and canned vegetables like okra and *tinda*. Under the 100 per cent export scheme, it may be worth-while to explore the possibilities of setting up fruit pulp processing units in India. The proposal could be studied and interested parties could visit India for this purpose.

India has been exporting Alphanso mangoes to Western Europe. The plant quarantine law applicable to tropical fruit in Japan impedes the export of Indian mangoes and melon. Japan may consider observing international standard in accordance with the code on technical barriers to trade as specified at the MTN's for the import of these fruits.

(5) *Garlic and Ginger*: Garlic and ginger are becoming popular ingredients in food due to their medicinal qualities. Dehydrated garlic has already got a market in Japan. The declining trend in these items needs to be arrested and exports can be substantially increased. There is also scope for exporting ginger and dehydrated onions. The capacity utilization in the dehydration industry at present is 45 per cent and the same can be augmented for increased exports.

(6) *Spices & Curry Powder*: Japan imports a very wide range of spices and their imports have shown a notable increase in the last decade. The total import of spices rose from 11804 tons in 1971 to 22135 tonnes in 1981—an increase of about 85 per cent. Japan ranks as the third largest individual market for spices after the USA and FRG. Table IV gives the latest figures of the export of spices from India to Japan and Table V shows India's share in import of spices by Japan.

Table IV

*Exports of spices from India to Japan during the year 1976-77 to 1980-81*

(Quantity : M. Tons—Value '000 Rupees)

Commodities	1976-77		1977-78		1978-79		1979-80		1980-81	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Pepper	160.54	2801.66	94.24	1735.27	167.01	3260.17	186.66	2756.95	187.54	2627.54
Cardamom small	77.01	10549.09	80.95	10518.61	69.00	10434.71	94.00	13667.59	85.30	8912.47
Cardamom big	..	..	..	..	8.00	107.00	..	..	..	..
Chillies	95.37	1061.51	440.99	5497.47	86.86	985.33	90.00	767.49	101.20	868.90
Ginger	0.66	1.12	421.15	6894.31	554.89	6098.97	369.96	2435.42	157.02	777.06
Turmeric	1459.22	5474.17	1045.90	7547.41	1160.36	15412.08	762.21	5605.19	1198.90	6250.69
Curry powder	4.30	113.31	11.79	281.42	16.35	189.74	13.99	4421.69	24.76	170.05
Coriander seed	743.80	5777.77	995.10	6564.36	349.72	1749.63	2.00	20.63	..	..
Curin seed	204.22	2814.88	197.58	3798.23	184.98	4137.90	221.73	2968.86	287.91	3233.88
Celery seed	74.95	455.48	204.76	989.31	59.77	400.42	48.12	305.53	41.20	252.98
Tennel seed	25.00	160.31	11.04	65.40	11.52	75.15	..	..	20.04	132.60
Tenugreek seed	533.20	1093.15	560.90	1633.82	424.54	1348.50	376.88	1116.72	309.86	1169.09
Garlic	..	..	..	..	492.00	8244.11	191.00	2555.87	125.00	1396.83
Gassia	268.35	830.41	220.00	619.19	26.60	105.00	..	..	50.00	95.92
Misc. spices	281.66	1021.07	207.35	11174.64	121.82	1412.85	97.32	436.45	37.94	194.42
Oils of spices	0.09	57.40	0.03	1.95	0.10	60.49	0.58	290.96	0.82	371.67
Oleoresin of spices	0.86	126.13	2.11	300.93	1.00	167.76	3.16	482.91	3.76	595.56
Total :	3928.63	32337.46	4493.66	47622.32	3734.32	54189.81	2456.61	33832.26	2631.25	27149.66

Source : 76-77 to 78-79; DGCIS Calcutta.

1979-80 onwards : Customs Lists—incomplete and provisional figures, subject to revision.

Japan's imports consist almost entirely of non-ground, whole spices in bulk. The importers prefer to import whole spices and then powder/process/pack them according to their own specifications. The import of spices and oleoresins have increased while the import of turmeric has remained steady. There has been a decline in the import of curry powder from 35 per cent in 1975 to 6.5 per cent in 1977. The import of pepper too has been reduced. India accounts for 25 per cent of the world export of pepper but its share in Japan's imports was only 5.4 per cent in 1979. As there are good stocks of turmeric, India is not planning to place any restriction on the export of this item for a few years. India can meet the prescribed sanitary regulations in spices and would like to set up units for exports with Japanese collaboration.

Table—V

## Share of India in imports of spices by Japan

(Quantity in tonnes)

Commodities	Total Imports into Japan			Share of India			Share of India in terms of %	
	1975	1979	1981	1975	1979	1981	1975	1979
Pepper	3115	4240	5187	44	231	203	1.4	5.4
Chillies	1532	3775	3608	..	41	53	..	1
All spice	64	64	65	..	..	..	..	..
Vanilla	25	52	21	..	..	..	..	..
Cinnamon	564	1313	1764	..	..	..	..	..
Cloves	191	225	234	..	..	..	..	..
Nutmeg	315	292	324	..	..	..	..	..
Mace & Cardamom	94	127	138	56	79	103	59.5	62.2
Seeds of anise, badian, coriandar, fennel, cumin, juniper etc.	2829	3681	4340	394	582	636	13.9	15.8
Curry powder	12	138	9	4	9	2	35.3	6.5
Ginger ground and unground	1099	2980	2030	30	623	75	2.7	20.9
Turmeric	1615	2429	2559	358	1484	1322	22.1	61.1
Other spices, n.e.s.	984	1773	1587	527	795	682	53.5	44.8
Total :	13437	21089	21866	1413	3844	3076	11.4	18.2

With the abolition of customs duty in Japan on spices and with the endeavours of the Food Export Promotion Council, it is hoped that India will be able to make a bigger dent in the Japanese market.

(7) *Cashew* : Japan is the third largest buyer of cashew kernels from India and one of the largest buyers of cashew nut shell liquid (CNSL). Recently the quantity of cashew kernels imports from India have declined as the prices have increased in the international market which has led to consumer resistance and decreased demand. The figures for total Japanese imports of cashew nuts and cashew nut shell liquid are at Table VI and VII respectively. Imports of these items from India to Japan are at Table VIII.

Cashew nut shell liquid imports by Japan have been fairly steady and India is making attempts to popularize this dynamic product in the Japanese market. A delegation of exporters visited Japan recently.

Table—VI

## Import of Cashewnuts into Japan

(M.T.)

Country/Year	1975	1976	1977	1978	1979	1980	1981
China	121	475	672	347	294	96	138
Hong Kong	12	14	Neg.	..	1	..	..
Malaya	..	..	..	Neg.	6	..	..
Indonesia	..	..	Neg.	32	11	234	176
India	3343	5479	3384	3027	4140	2085	875
Sri Lanka	..	..	1	..	..	8	72
Kenya	..	11	326	230	50	166	139
Tanzania	402	238	61	138	38	91	371
Mozambique	440	342	189	111	6	..	150
Brazil	5	..	..	..	2	106	267
Thailand	..	..	..	..	..	..	10
Total :	4323	6559	4633	3885	4548	2786	2198

Table—VII

*Import of Cashewnut shell liquid into Japan*

Countries/Year	(M.T.)						
	1975	1976	1977	1978	1979	1980	1981
China	92	422	868	96	248	452	161
Malaya	..	..	..	12	52	30	50
Philippines	..	..	..	110	174	131	..
Indonesia	20	..	..	66	103	228	20
India	1457	2026	835	1021	3991	4436	3391
Sri Lanka	..	..	..	10	25	..	..
Brazil	419	800	225	1384	1071	794	562
Tanzania	520	605	200	350	339	650	820
Mozambique	1385	2673	2163	2347	888	30	50
Thailand	..	..	..	..	..	5	30
Kenya	..	..	..	..	..	..	160
Total :	4393	6523	4291	5396	6891	6756	5244

Table—VIII

*Export of Cashew Kernels and Cashewnut shell liquid from India to Japan*

Year	Cashew Kernels M.T.	Rs. '000	Cashew-Liquid nut shell M.T.	Rs. '000
1971-72	1286	14318	2067	2483
1972-73	1998	22418	1646	1966
1973-74	3229	47618	849	1145
1974-75	1808	33061	1631	3928
1975-76	3862	74516	2526	5672
1976-77	5177	115936	1072	2921
1977-78	3167	119629	364	1100
1978-79	3808	121407	1437	11431
1979-80	3407	111482	4927	56536
1980-81	1576	75400	3763	25198

(8) *Guar gum* : Guar gum is a natural food additive. India has been exporting about 500 tonnes of guar gum valued at Rs. 25 lakhs to Japan. A recent study has shown that there is potential for import of 5,000 tonnes into Japan. As this Indian commodity is of a very high quality, Japan can consider increasing the quantity of the import of this item.

(9) *Flavouring and colouring agents*: India is in a position to export oleoresins which are used in food processing. India maintains very rigid standards of quality control. Japanese survey teams could visit India and satisfy themselves regarding the quality and the potential that exists in India.

(10) *Casings*: Japan is a major market for sheep casings and accounts for 9 per cent of India's exports. However, India's market share has declined from 10.4 per cent in 1975 to about 3 per cent at present. China and Australia have increased their share from 20 per cent to about 33 per cent. India is in a position to supply 14"-18" sheep casings. The delegation of Japan sheep-casing importers who visited India recently has suggested improving the sanitary conditions for processing casings. It is expected that the imports will improve in the future. Joint ventures in this field would prove beneficial.

#### b. Other Items

1. *Cotton*: India has been a regular exporter of cotton to Japan for the last three decades. Until recently, these exports to Japan consisted solely of harsh short staple Bengal desi cotton and the quantity ranged from 0.8 to 3.0 lakhs bales per annum.

Since the last two to three years, the cotton situation in the country has undergone a significant change for the better. Under the impact of the centrally sponsored Cotton Development Programmes, the production has registered a sharp rise and after nearly three decades of deficit in cotton supplies, India has emerged as a surplus country in cotton production. Consequently, the Government of India have been permitting exports of staple cotton also in addition to the traditional variety of harsh short staple Bengal *desi* cotton.

During 1978-79, an export quota of 3.5 lakh bales of staple cotton was released and in 1979-80, a still higher quota of 6.0 lakh bales of staple cotton was allowed for exports. During 1980-81, the government released an export quota of 1 lakh bales of staple cotton. Japan has been a buyer of not only Bengal *desi* cotton but of staple cotton as well. Some of the varieties which have been exported to Japan include B. 1007, A-51-9 and H. 4.

The Sixth Plan proposals on cotton lay stress not only on maintaining self-sufficiency in cotton by meeting the rising demand in full, but also on creating a surplus of cotton for export to augment the foreign exchange earning. It is, therefore, expected that the country will have a sizeable surplus of staple cotton as well as the harsh short staple Bengal *desi* cotton which can be released for export. Japan is one of the leading importers of cotton in the world. Its total imports of cotton of all categories aggregated to 38.45 lakh bales in 1977 and 20.46 lakh bales upto June 1978. Presently, the United States of America takes a major share of Japan's cotton imports. In 1978-79 (August-June) the USA has exported 11.6 lakh bales of cotton to Japan of which 11.2 lakh bales were of staple length of upto 1-1/8". It is felt that it will be possible for India to take some share in the export of similar quality of medium and long staple cotton.

In respect of Bengal *desi* cotton, India's exports to Japan, which had touched a peak level of about 3 lakh bales in 1973-74 registered some fall in recent years because of the competition from Pakistan and because Japan itself replaced part of its requirements of such cotton with synthetics. However, India's exports of this type of harsh short staple cotton to Japan could be increased, particularly as there is a comfortable surplus of Bengal *desi* cotton and the Japanese market can absorb more of raw cotton.

India can export long staple (1" to 1.8") cotton and 2-3 lakh bales of long staple cotton. Bengal *desi* can also be exported.

2. *Jute Goods*: Jute goods are a major item of India's exports to Japan. In 1979 these items consisted of 2.13 per cent of India's total exports to Japan. India has been suffering because of stiff competition offered by other countries and from synthetic sacking and bags. Export of carpet backing cloth and jute fabric can be increased as their quality improves and the price becomes competitive. The International agreement on use of jute and synthetic products by developed countries should go some way in improving the prospects of the use of jute products.

(3) *Tobacco*: Tobacco is a traditional item of India's exports to Japan. However, exports have been declining continuously during the last four years. Exports declined from 4069 MT in 1978-79 to 1925 MT in 1980-81 or 53 per cent. Japan's global imports during the same period declined from 68,972 to 55,485 MT i.e. 20 per cent. This decline has been shared by all major suppliers like USA, Turkey, China, Thailand and ROK. Imports from Greece, however, increased by 32 per cent in 1980. India had a market share of nearly 6 per cent in 1977, but in line with the fall in total imports into Japan, India's share also went down to around 3.1 per cent in 1981. India's exports position is as follows:—

Exports of unmanufactured tobacco from India to Japan

Year	Quantity (In MTs)	Value (in Rs./ crores)	Unit value (Rs./Kg.)
1976-77	5073	8.76	17.27
1977-78	3862	9.61	24.38
1978-79	4069	9.57	23.53
1979-80	2510	5.99	23.86
1980-81 (Provisional)	1925	5.49	28.52

The tobacco business in Japan is controlled by the Japan Tobacco and Salt Public Corporation (Government of Japan monopoly undertaking). According to the Corporation officials, there has been a continuous declining trend in the consumption of cigarettes in Japan due to sluggish demand. At present Japan has a surplus inventory in domestic leaves for about two years and the down trend in imports is expected to continue.

Notwithstanding the present position, Japan still offers a good market for mild testing, low tar medium/low nicotine, flu-cured leaf tobacco used in well flavoured blended cigarettes. It is in this context that India's trade with Japan in tobacco has to be viewed. Japan is understandably highly selective in her purchase of tobacco leaf as tobacco products manufacture is oriented towards satisfying the changing consumer preferences in blends, quality and taste. The Japan Tobacco and Salt Public Corporation has established a Liaison Office in Bangalore with a Liaison Officer engaged in conducting trials on tobacco in India with a view to exploring possibilities of growing the types of tobacco which will meet Japan's requirements. Research work is also in progress in the Indian Council of Agricultural Research to improve the quality of the leaf. The VFC tobacco grown in the light soils of Karnataka is particularly well suited to the Japanese needs subject to adequate demand being generated. Even the high nicotine tobacco can be produced in sufficient quantity in India. Under these circumstances possibilities of long term contracts for supply of tobacco leaf can be explored, and even technical collaboration from Japan can be sought for which a detailed programme can be submitted.

4. *Fertilizers* : India is significantly dependent on imports of fertilisers. Japan is a producer and potential exporter of nitrogenous fertilisers. For this reason India has been importing fertilizers viz. urea and ammonium sulphate from that country. During the last few years India imported fertilizers from Japan against various contracts as given below:

(Quantity in lakh tonnes Value in Rupees crores)

Year	Urea		Ammonium Sulphate	
	Qty.	Value	Qty.	Value
1975-76	4.22	89.61	..	..
1976-77	0.92	9.32	..	..
1977-78	..	..	..	..
1978-79	0.53	66.07	0.45	28.84
1979-80	..	..	..	..
1980-81	..	..	..	..

Till 1974, India was buying nearly half a million tonnes of fertilizers from Japan each year. However, owing to increasing naphtha prices, the production cost in Japan went up progressively making Japanese fertilisers non-competitive in the international market. The strengthening of Japanese yen vis-a-vis the US dollar also aggravated the problem. Therefore, the Japanese producers have not been able to match prices available in the international market. As a result, India's imports from Japan have dwindled to nil during the last two years. During the last six year's India has imported only 187,000 tonnes of urea ammonium sulphate from Japan against the yen credit. Rest of the material was purchased against free foreign exchange.

The Japanese Government has been considering ways and means of assisting the Japanese fertilizer production to compete in the international market. If nitrogenous fertilizer is available at international prices, India would like to continue purchasing it from Japan.

Last year the Japanese government offered a grant of yen 1,000 million equivalent to Rs. 3.5 crores for the procurement of fertilizer from Japan. India indicated its interest in the purchase of only urea from the grant provided it was in bulk or bagged form conforming to India's standard specifications and also if the price was reduced to a level where it was competitive with other suppliers. The two governments exchanged notes in July 1981 and the MMTC is taking further action for purchasing urea from Japan.

5. *Castor oil*.—India with Brazil accounts for 85 per cent of global production of castor oil. The export of this item has progressively decreased both in quantum and value over the years as it is evident from the figure below :

Year	Quantity (MTs)	Value (Rs. lakhs)
1978-79	6093	362
1979-80	4708	275
1980-81	353	22
1981-82	344	

The primary reason for this steep fall is due to imports from Thailand at more competitive rates. India has the capacity to export on a more competitive basis. The constraints due to freight have also been overcome. Importers from Japan may like to consider increasing their imports from India.

6. *Sandalwood Oil and Dye Stuffs*.—India has been exporting vegetable alkaloids, sandalwood oil and dye-stuff in small quantities. There is scope for further expansion of the export of these items.

7. *Furniture*.—India is manufacturing both utility and ornate furniture including light cane and bamboo furniture. Japan is changing its life style and progressively going in for a western way of life. This involves the use of more furniture, upholstery, carpets and drapes. Japanese teams could come to India and select the wood, and experts could provide guidance in design and quality to cater to the taste of the Japanese consumer. In regard to cane and bamboo furniture, a Japanese team has already visited India. On the basis of its report further action could be taken. A tie-up could prove lucrative for both countries. A number of other bamboo items like baskets, trinklet cases, stools etc. can also be made to specification for export.

8. *Agricultural Engineering goods*.—It is apparent from Japan's trade profile that it has been importing agricultural machinery, farm implements and garden tools. A Japanese Survey Team has already been to India and has submitted a report. If the Indian products meet the specifications as laid down in the Japanese industrial standards, these goods could be imported. If for some reason they fall short of the Japanese requirements, structural changes could be undertaken to satisfy Japanese quality and specifications. This would enable Indian manufacturers of agricultural machinery equipment to make a break-through in the Japanese market.

### c. General System of Preferences

Japan introduced the General System of Preferences in August 1971 and has been renewing it on an annual basis. There has been improvement of the scheme over these years. In view of increasing imports from developing countries, Japan unilaterally extended it for a period of 10 years beginning with fiscal 1981. The base year for calculating import quotas has also been changed from 1975 to 1977 resulting in a 20 per cent overall increase in quota values.

In spite of these beneficial changes, statistics reveal that there has been a decline of 7 per cent in the amount of imports (value base) under GSP in fiscal 1980 compared to 1978. Moreover, the rationale behind international trade policies which relate to developing countries, is to improve the quality of life of the people. Therefore, per capita income should be the criteria and commodities which affect this income should be covered by the GSP in low income countries particularly agricultural items on which the meagre income of the majority of these people depends.

The four tables indicate the changes which India would like effected under the G.S.P. concerning agricultural items.

Table IX covers the exports in respect of which expansion of G.S.P. imports quota is desired.

Table X covers the export items in which a reduction in GSP tariffs would be beneficial.

Table XI indicates the items in which India seeks expansion of G.S.P. quota and reduction of tariffs.

Table XII deals with export commodities which could be included in the GSP Scheme with appropriate tariff rates.



Table IX

*Agricultural item of India's export interest to Japan in respect of which expansion of GSP import quota is sought. (GSP tariff is in brackets in col. 2)*

Sl. No.	CCCN No.	Product description	Quota (81-82)	(Value in 1000 Yen)			Remarks
				Export from India to Japan			
				1978	1979	1980	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1.	29.16-130 (FREE)	Citric acid	128519	..	79595	244001	The global quota is administered on first come first basis. Normally a country is eligible for 50% of the global ceiling.
2.	44.14 (FREE to 6.5%) (LLDC-FREE)	Wood sawn length wise, sliced or pelled, veneer sheets and sheets for plywood of kwarin, tsuge or box wood, tagayasan, red sanders-wood, ros-wood, sandal wood, ebony wood, cedar, of different thickness.	834989	60267	449965	281815	
3.	54.03-010 (FREE)	Flex and ramie and its fabrics.	239449	36694	829668	101745	
4.	58.02-100 (FREE)	Other carpets, carpeting rugs, mats of coir.	97184	59237	70898	58572	
5.	62.03 (FREE)	Sacks and bags of a kind used for the packing of goods.	98945	39096	41586	236	

Table X

*Agricultural items of export interest to Japan included in GSP of Japan in respect of which India seeks a reduction in GSP tariff rates (GSP tariff is in brackets in col. 2)*

Sl. No.	CCCN No.	Product description	Quota (81-82)	(Value in '000 Yen)			Remarks
				Export from India to Japan			
				1978	1979	1981	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1.	07.04.090 (10%)	Other dried, dehydrated, or evaporated vegetables, whole, cut, sliced, broken or in powder, but not further processed.	..	199031	163381	23121	
2.	09.02-110 (14%) LLDC-FREE	Black tea put up in containers for retail sale.	..	20059	30048	40759	
3.	09.02-130 (2.5%)	Black tea in bulk	..	681645	795254	719016	
4.	20.01-120 (10%) LLDC-FREE	Mangoes and mangoes-teens prepared or preserved by vinegar or acetic acid, containing sugar.	..	10730	20304	44759	
5.	21.02-122 (10%) LLDC-FREE	Instant tea, not containing added sugar	..	29078	10408	30846	
6.	56.07-226 (3%) LLDC-FREE	Woven fabrics of regenerated fibres (discontinuous) containing less than 85% by weight of viscose rayon mixed with continuous man-made textile materials.	1108141	228	18117	..	
7.	57.06 (4%)	Jute yarn	623366	21655	1450	..	

Table XI

*Agricultural items of export interest to Japan in respect of which India seeks expansion of GSP import quota and reduction of tariffs under GSP tariff is in brackets in Col. 2)*

(Value in '000 Yen)

Sl. No.	CCCN No.	Product description	Quota (81-82)	Export from India to Japan			Remarks
				1978	1979	1981	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1.	57.10/010/030/040 (8%)	Woven fabrics of jute	2346228	1344995	5023902	3589664	

Table XII

*Agricultural items of export interest to Japan in respect of which a request is made for inclusion in Japanese GSP with appropriate GSP tariff rates (GSP tariff is in bracket in col. w 2.)*

(Value in '000 Yen)

Sl. No.	CCCN No.	Product description	Quota (81-82)	Export from India to Japan				Remarks
				1978	1979	1980	1981	
1.	03.03.212 (GATT 6.9%)	Cuttle fish and squid	--	129247	895706	547158	321869	
2.	03.03 (MTN-15%)	Lobsters fresh chilled, frozen other shrimps, prawns fresh chilled or frozen.	--	35451246	54316382	43729541	54005439	
3.	08.05-200 (23.8%)	Walnuts fresh or dried	--	22228	87382	13113	34829	
4.	09.10-100 (13.5%)	Curry	--	1068	77521	6232	2250	
5.	12.01-100 (10%)	Ground nuts	--		1,2126	368138		
6.	13.02-300 (20%) or 50 Yen per kg.	Shellac and other refined lacs.	--	25353	40573	53413	33360	
7.	15.07-920 (9.4%)	Castor oil	--	534693	950671	227224	70476	
8.	15.07-991 (Y. 18.88 kg)	Fixed vegetable oils of an acid value exceeding 0.6 n.e.s.	--	552485	888835	1720433	2919250	
9.	15.07-999 (Y. 21.43/kg)	Fixed vegetable oils n.e.s.	--	137694	126348	432613		
10.	21.04-210 (15%)	Instant curry and other curry preparations	--	7512	14923	7769	10237	
11.	55.09 (8.4-14%)	Woven fabrics of cotton (This item was excluded from the scheme in April, 1981)	--	975831	1439026	1462779	1147708	
12.	50.09 (10-12.5%)	Woven fabrics of silk	--	152743	581108	244232	318408	

Note:— Item 8 includes oils other than sesame oil.  
Item 9 sunflower oil, rice bran oil.

As far as table XII is concerned the following items are of special interest to India:—

(i) *Cuttle Fish and Squid*.—During the years 1978, 1979, 1980 and 1981, total imports into Japan were of the order of 118, 142 tonnes, 155,868 tonnes, 94375 tonnes and 68776 tonnes respectively. India's exports were 248 tonnes, 999 tonnes, 553 tonnes and 435 tonnes respectively. Although, the other major competitors are GSP beneficiaries and India's import share is not significant, if these items are included in the GSP with zero tariff it will provide India a competitive edge over developed countries.

(ii) *Castor Oil*.—India had a share of 5.6 per cent in quantity and in value in Japanese imports during fiscal 1981-82. The other competitors are Thailand, Brazil and China (GSP beneficiaries) and FRG and USA. Japan has developed crushing capacity of castor seeds. This item ought to be included in the GSP Scheme because of the large market share India occupies and in order to obviate the increasing threat which is posed by supplies from FRG and USA.

(iii) *Instant Curry and other curry preparations*.—India had a share of 41.07 per cent in quantity and 49.88 per cent in value terms in total Japanese imports in fiscal 1979-80. Inclusion under the GSP would help India to compete with countries like Canada and U.K.

#### d. Quality Control

India took cognisance of quality control and enacted legislation as early as 1963. Since then India has developed basic infra-structure for this purpose. Japan is a fastidious market. To penetrate it, a great deal of attention has to be paid to quality and packing. At the last joint meeting, the Japan Committee presented an impressive paper with its main emphasis on the ways in which quality control is exercised in Japan. The Agricultural Marketing and Research Organization in India has begun to certify the reliability of products by giving Agmark certification. To satisfy rigid quality standards required, the Indian Agricultural Marketing Organization and the Japanese Standards Organizations could have discussions in order to equate the standards. Technical assistance and information regarding quality control could be rendered by Japanese teams visiting India and vice-versa and through seminars and conferences.

### 3. SECTORAL COOPERATION

The scope for some important sectors having a bearing on agriculture is briefly discussed in this section.

#### 1. Fisheries

Through the Exclusive Economic Zone Act, effective from 15th June, 1977, India has acquired possession of two billion square kilometres of fishery area—five times the countries continental shelf and 2.5 per cent of the surface area of the Indian Ocean. A vast sea area has become available for exploitation of fishery wealth. Japan is one of the leading countries of the world in fish production and in highly advanced technology in processing and marketing these products. Japan is India's largest trading partner in marine products. Recently restrictions have also been placed by several countries on Japanese fishing in their territorial waters. Significant potential for co-operation, therefore, exists in fisheries for further development of production and productivity, for processing and marketing in the form of integrated joint ventures and thus expanding trade between the two countries.

In 1978-79, the Government of Japan financed the construction of two fishery survey and training vessel. One of these two specialized vessels is a tuna-long-liner cum-squid gigger (31.5 metres) and the other is a tuna-cum-trawler (33 metres). These vessels were constructed in Japanese shipyard for the use of the exploratory fisheries project, Bombay and the Central Institute of Fisheries, Nautical and Engineering Training, Cochin for survey and training purposes. Both the vessels are in operation and functioning very well. The Indian proposal to provide Japanese experts for training Indian personnel for optimum utilization of these vessels was under the consideration of the Government of Japan. Through the aid offered by the Government of Japan in 1981-82, it was proposed to obtain one tuna-seiner. It was also planned to import medium size sail-assisted fishing vessels.

*Scope for Further Co-operation.*—Except for some arrangements with small fishing companies, there is no other joint collaboration. Some of the state corporations like the Kerala Fisheries Corporation, Tamil Nadu Fisheries Corporation and other private parties are interested in advanced technology in tuna and cephalopods (squid, cuttle fish and octopus). Processing of tuna could include freezing for conversion into *katsubushi* and *arafuchi* for canning. Initially the collaborating parties could operate the vessels on a charter basis and if the charter is found to be viable, a joint sector company could be set up.

*Deep Sea Fisheries.*—Japan can also make a contribution in assisting India in developing its deep sea resources. So far, not much has been done in the exploitation of the resources available in the Indian 200 mile Exclusive Economic Zone. It is estimated that 2 million tonnes of fishery reserves are available in the deep sea area. The approximate distribution of these deep sea fishery resources are as follows:—

1. Tunas and allied Fishes (Tunas are yellow fin, blue fin and skip jack)	1.00 mn. tonnes
2. Elasmobranchs (sharks etc.)	0.40 mn. tonnes
3. Perches Prawns Lobsters Squids and cuttle fish (cephalopods) Oceanic fishes—sword Fish, marlins etc.	0.60 mn. tonnes
Total	2.00 mn. tonnes)

Japanese participation and expertise could help in the exploitation of this marine wealth. In specific terms Japan can assist in respect of the following:—

#### A. Tuna Fishery

- (i) Long Line Fishery
- (ii) Pole and Line Fishery
- (iii) Purse—Seining

### (B) Squid Jigging

The Marine Products Export Development Authority had prepared a scheme for Japanese aid for Squid-jigging. This has already been presented for assistance from Japan under the technical aid programme.

In the above areas what is required are the services of master fishermen who have had deep sea fishery experience in long-lining, pole and line fishery, purse seining and squid jigging. They should be available for a minimum period of two years in India. Their specific job will be training of their counterparts in India operating in the survey/training vessels under the Ministry of Agriculture in places like Porbander, Cochin and Visakhapatnam. There are, at present five vessels in operation, two long lining vessels, two purse seining vessels and one squid jigging-cum-purse seining vessel. They are in the range of 300 tonnes. In all these vessels the basic crew are available.

(C) *Training of Indian Operatives in Japan.*—Simultaneously, with the deputation of master fishermen to India for the above purposes, Indian skippers who are also master fishermen can receive training in Japan in long-lining, pole and line fishery, purse-seining and squid-jigging.

(D) *Supply of deep-sea vessels.*—Japan can also make available to India a few large (500 tonne tuna purse-seiner) with the crew-skipper, marine engineer and master fishermen. It is essential that the vessels and the crew come together. The vessels, if need be, could be made available under the Japanese Aid Programme.

(E) *Provision of Vessels under the new charter guidelines.*—The Government of India have issued liberalised Charter Guidelines. There is practically no response from Japanese parties for supply of vessels on charter arrangements for deep sea fisheries operations in India. There are no joint ventures between India and Japanese parties now in operation in the deep sea area. Japan can come forward in the promotion of joint ventures and in provision of vessels under charters. The regulations concerning the charter policy of the Government of India is at appendix I and the policy regarding joint ventures is at appendix II.

## 2. Forestry

*Landscaping.*—Japan has executed afforestation and social land-scaping projects in its country side particularly on the mountains as part of its environmental programme. The landscaping has been done with a very sensitive touch. In India, the mountain side as well as some of the urban and rural areas have been denuded of trees. To balance the ecology and prevent erosion of soil and conservation of its forest wealth, India has undertaken afforestation and social forestry programmes on a large scale. India can benefit considerably from the management techniques in urban forestry which have been applied by the Japanese. For this purpose a few Indian fellows could visit Japan for a period ranging from three to six months.

*Pelletisation of wood wastes.*—It is estimated that about 70 per cent of wood waste, in both the coniferous and broad leaved forests in India goes waste. This could be utilized by pelletisation which would concentrate the residue under pressure into compact blocks. Since this is a new technology which has yet to be developed by India it could be imported from Japan. The price of domestic energy, particularly of gas and electricity is increasing in India. Therefore, forest waste could be utilized for meeting the energy needs of the urban population.

*Sawdust Briquettes.*—Japan has developed the technology of manufacturing saw-dust briquettes from saw-mill wastes by using high temperature and pressure. The conversion of wood waste into a utility product by manufacture of briquettes is entirely a new field of waste utilization in the country and as such the transfer of this technology will greatly alleviate the present constraint of fuel-wood supply in the country.

## 3. Fertilizers and Pesticides

### (i) Fertilizers

Highly industrialized Japan lacks space for location of new factories. The pollution problem has also bedevilled the setting up of certain industries. India, with its land masses can easily accommodate industries like the fertilizer industry. Manufacture of fertilizers is one important area where Japan has been collaborating with India extensively. However, a great deal of scope exists for further co-operation in the field due to India's need for development of agricultural production not only for domestic use but also for exports.

With Japan's assistance in the past, several fertilizer complexes have already been established in India. Japan's contribution has been principally in terms of licencing certain proprietary processes and in providing equipment under credit. There are no fertilizer plants where equity participation from Japanese parties has been sought for or sanctioned. The list below gives the details of the units where Japanese technology and equipment have been used:—

Sl. No.	Fertilizer Unit	Nature of collaboration	
		Process licence or know-how	Equipment supplied on credit
1	2	3	4
1.	Fertilizer Corpn of India (FCI) Gorakhpur (original plant + expansion)	(1969) (1975)	(1969) (1975)
2.	IEL Kanpur-urea plant-original expansion	(1969) (1980)	(1969) (1980)
3.	Shriram Chemicals, Kota	(1969)	(1969)
4.	GSFC Baroda	(1969/74)	(1969/74)
5.	Zuari Agrochemical, Goa	(1973-75)	(1972-75)
6.	SPIC, Tuticorin (Acid Plants and NPK)	(1975-76)	(1975-76)
7.	RCF, Trombay (Phos-acid Plant)	(1974)	—
8.	HFC Haldia (Phos-acid Plant)	(1980)	—
9.	NFL Bhatinda	(1979)	(1979)
10.	NFL Panipat	(1979)	(1979)
11.	Kribheo Hazira		(Agreement entered into
12.	RCF, Thal		--Do--

Japanese suppliers have been responsive to the finer nuances of India's policy of importing technology or equipment. For instance, for some of the latest plants at Bhatinda and Panipat, the Japanese themselves carried out a survey of Indian capabilities in the field of fabrication of equipment, recognized where and to what extent imported components would have to be provided to get the equipment fabricated within committed costs and time schedules, arranged for sequential supplies of such components and followed it up at the Indian workshops to see that satisfactory assemblies were made and supplied in time. In addition, Japanese industrial culture itself is based on very close team work in setting up group objectives and directing unified efforts to attain such objectives. This has also helped a great deal in realizing a high degree of reliability in projects where Japanese collaboration has been offered and accepted. However, Japanese credits for sophisticated and costly items are mostly tied credits for which sources other than Japan are confined only to a restricted list of less developed countries. In the absence of comparative quotations except from Japanese sources, it usually becomes difficult to judge the reasonableness of prices of the offers. If untied credit with possibilities of international competitive bidding could be possible it would ideally suit India's needs.

The Japanese have developed highly sophisticated technology for computerised control of some of the bigger plant complexes. Although this technology has been offered for several of the plants, upto now none of the units have gone in for the same. Even the present operative units are still in the process of getting attuned to the level of sophistication of the ultra-modern gadgets which require a high degree of skill in maintenance to keep them properly tuned up and reliable. Such skills are still to be developed within the country.

*Collaboration in Third Countries.*—At least one Japanese engineering and consultancy firm has recently opened an office in India from where Indo-Japanese collaboration with third country turn-key projects can be handled. The Japanese have come to recognise that costs on certain fabrication facilities and on provision of skilled personnel for project services can be made more competitive by utilising skills available within India. This venture, therefore, has been more in the nature of one arising out of enlightened self interest. It is hoped that more such collaborative ventures for joint Indo-Japanese participation in third country projects may follow if the current experiment shows promising results.

*Prospective assistance.*—Japanese assistance has been offered for the proposed gas based fertilizer plants to be set up at Hazira in Gujarat and Thal in Maharashtra.

The gas based Hazira Fertilizer complex will consist of two ammonia plants with a capacity of 1350 tonnes per day (tpd) and four urea plants each of the capacity of 1100 tpd. An agreement has been entered into between Government of India and the Government of Japan for a loan assistance of Yen 20 billion for covering a part of the foreign exchange cost of the ammonia plants.

The Thal Fertilizer Complex will consist of two ammonia plants with a capacity of 1350 tonnes per day (tpd) and three urea plants each of the capacity of 1500 tpd. An agreement has been entered into between the Government of India and the Government of Japan for a loan amount of Yen 20 billion for financing a part of the foreign exchange cost of the ammonia and urea plants through O.E.C.F. of Japan.

Proposals are also under consideration for setting up a few more fertilizer plants based on free/associated gas from Bombay High/Bassein off-shore areas. One of the plants with an annual capacity of 343,000 tonnes of nitrogen may be set up in the public sector. The tentative estimated cost of the planned project is Rs. 425 crores with a foreign exchange component of Rs. 125 crores (approximately equivalent to 34725 million Yen). This proposal is in the planning stage and details would be available after the feasibility study is prepared.

The Sixth Five Year Plan envisages the setting up of eight nitrogenous and eleven phosphatic fertilizer projects. Japan may like to consider participation in the implementation of these plans in a substantive manner.

#### (ii) Pesticides

*Import of Pesticides.*—At present 400 tonnes of phenthoate technical valued at Rs. 1.5 crores is the main pesticides imported from Japan. In the past, small quantities of lindane etc. was imported but now it has been discontinued due to local availability. Although a plant for production of phenthoate technical has been installed in the country by M/s. B.P.M., Bombay, they have not begun regular production due to technology problems. Even if they are able to update their technology and start production, it is expected that import of phenthoate may continue for the next 2-3 years upto the value of Rs. 1.5 crores per year.

Two pesticides are being introduced in the country at present namely, Kitazine and Fenverlarate Technical. It is planned to import 40 to 50 tonnes of these pesticides for the next 2 to 3 years for the seeding programme.

*Import of Technology.*—In the past the following BHC plants along with know-how etc. have been imported and installed by :—

1. M/s. Kanoria Chemicals & Industries Limited.
2. M/s. HIL
3. M/s. Mico Farm Chemicals
4. Pesticides & Brewers Limited.

The aforesaid plants have been installed for 13 per cent BHC Gamma. The know-how has been fully absorbed and assimilated.

M/s. Rallies India Limited had imported technology for the manufacture of Fenitrothion Technical from Japan in 1971. The plant has been installed and is in full production. The technology has been fully absorbed and assimilated. The payment on lump-sum basis has been fully made.

The following two schemes have been received for collaboration with Japan.

1. M/s. Rallies India Limited for the manufacture of Fenevclarate Technical.
2. M/s. Pesticides India, Udaipur for the manufacture of Kitazine.

The aforesaid schemes are at present under consideration. Once these schemes are approved, import of technology can be considered on merits.

## ANNEXURE I

### GUIDELINES TERMS AND CONDITIONS FOR CHARTER OF FOREIGN FISHING VESSELS

#### I. Guidelines

1. The main considerations in permitting operation of foreign fishing vessels on charter by Indian companies and joint ventures companies in deep sea fishing in the exclusive economic zones are as follows :

- (a) to establish the abundance and distribution of commercially important fish resources in un-explored and under-exploited areas;
- (b) to assess the craft and gear suited for economic operation.
- (c) transfer of technology through training of required manpower for manning vessels, processing, marketing and management; and
- (d) to enlarge the deep sea fishing fleet on ownership basis.

2. The priority for consideration of charter applications will be as follows:—

- (i) Public sector undertakings.
- (ii) Fishermen coops.
- (i) Small and medium scale entrepreneurs.
- v) Large houses.

As between wet charter and dry charter preference will be given to applications for dry charter.

3. In order to achieve the above objective and to protect the interests of those engaged in the current effort in commercial fishing and to safeguard the security interests, a set of terms and conditions for chartering foreign fishing vessels is given under the terms and conditions mentioned below :

#### II. Terms and Conditions

1. The paid up share capital of the Indian company chartering foreign fishing vessels shall not be less than Rs. 5 lakhs during the charter period.

2. Indian charter shall have managerial personnel who have had actual experience of marine fishing industry.

3. Charter will be permitted for a period of three years, renewable on satisfactory performance, for one year at a time and for a maximum of 2 years (in total not exceeding five years). There will be specific obligations on the part of the Indian charterer to purchase a stipulated number of vessels before the end of the specified period of time. The maximum number of vessels that may be chartered by one applicant for one type of fishing will be limited to five.

4. The charterer will have to give before the commencement of the charter, a bank guarantee to the value of Rs. 2 lakhs per chartered vessel which would be invoked in the event of the charterer not purchasing the vessels at the end of prescribed time mentioned.

5. The charterer shall ensure that atleast 20% of the crew are Indian at all times and that they are posted as understudies to foreign skipper, engineer and to other operational crew. Such understudy personnel shall be kept in readiness to embark on the foreign fishing vessels under charter at the time of naval inspection and they/their substitutes shall remain on board throughout the charter period.

6. The area of operation of the chartered fishing vessels shall be beyond the territorial waters, namely, 12 nautical miles from the shore, unless otherwise specifically permitted for any specialized type of fishing and subject to any other area restrictions and further these vessels shall operate beyond the area of operation of the mechanised and non-mechanised boats and shall be as per the direction of Government from time to time.

7. There will be no payment of technical fees or royalties, over and above the charter hire. Payment of any marketing commission will be with the prior approval of the Government.



8. The Indian company will make irrevocable arrangements for purchasing the prescribed number of vessels either by import or from an Indian Shipyard before the expiry of the stipulated period.

9. The charter party shall be entered into on the basis of the model charter party as appended. They will, however, have freedom to make modifications to suit their requirements but shall in all cases obtain prior approval of the Government to the final charter party before commencement of the fishing operations. The charter party shall provide for arbitration in India.

10. The chartered vessels shall carry all documents, like, Director General of Shipping licence, attested copy of permission letter, crew permit etc. at the time of naval inspection of vessels. These documents shall be retrieved at the time of customs clearance and re-delivered to the vessel when she makes re-entry in the Indian waters. The vessel shall also carry up to date valid permit.

11. The foreign fishing vessel under charter shall take on board an Indian Scientist who shall have free board and access for collection and examination of the data and material. The Indian company shall meet the expenses on food for the Indian Scientists while on board the charter vessel.

12. The Indian company shall pay the Government of India a Licence Fee of Rs. 10,000 per vessel per annum.

13. The charterer shall furnish to the Government of India, Department of Agriculture and Cooperation, New Delhi and the Director General of Shipping, Bombay, valuation and sea worthiness certificates for the fishing vessels from a recognised agency acceptable to the Government.

14. The operation of fishing vessels will be subject to provisions in the Merchant Shipping Act and permission of the Director General of Shipping shall be obtained for the movement of the fishing vessels in Indian waters. The charter vessel shall meet the Indian or International (IMCO) requirements in respect of safety of vessels and crew.

15. The entire equipment and machinery fitted on the foreign vessels shall be open for inspection by the representative of the Government of India. The foreign collaborator shall furnish in advance 7 copies of the complete details of equipment viz. radio, radar, other sensors, scientific contrivances for biological and oceanographic observations and its accessories and machinery, international call signs range of radio frequencies/channels and parameters of communication equipment of each vessel. Any change in the details given shall be communicated and specific approval of the Government obtained for their use. No electronic intelligence gathering equipment shall be fitted on board. Equipment essentially required for fishing, however, may be allowed. The vessel shall operate only after obtaining all the necessary clearances from the Government in this respect.

16. Representative of the Government may inspect the chartered fishing vessels at any time, without prior notice, skippers and others on the said fishing vessels shall furnish whatever information that is required by the representative during such inspection.

17. The company shall give an undertaking (in duplicate) to the effect that,

(a) No oceanographic research, surveys or exploration etc. shall be carried out within our territorial waters.

(b) No oceanographic research, surveys and other investigations shall be carried within our Exclusive Economic Zone (zones extending upto 200 miles from our coast) without prior express approval of the Government of India.

(c) No oceanographic research, surveys and other investigations shall be carried out beyond 200 miles from the coast where a part of the operations comes within the zone extending upto 200 miles from the coast, without prior approval of the Government of India.

18. The chartered vessels shall report its location and the quantum of catch in the hold to coast Guard station and P.C.B. Signal (Position, Course, speed Signal) to Naval Wireless Station daily at 08.00 hours in accordance with the Admiralty List of Radio Signals, Volume I.

19. Details of arrival/departure of chartered vessels in the Indian ports shall be forwarded simultaneously to Naval Headquarters, New Delhi, Coast Guard Headquarters, New Delhi and the Department of Agriculture and Cooperation, New Delhi.

20. After the initial Naval clearance and after each re-entry at the port of operation, the chartered vessels shall return to her port of operation at least once during thirty days. The Indian company shall ensure that the catch is correctly evaluated. It shall also retain copies of fishing log sheets of any voyages. After completing export formalities and obtaining customs clearance, the chartered vessel shall leave the Indian Economic Zone and shall not indulge in unauthorised fishing in the Indian Economic Zone on her outward passage.

21. The foreign crew on the fishing vessels shall be employed only after obtaining necessary clearance from the Government in this regard. The crew of the chartered vessel shall be issued with laminated identity books/cards carrying their photographs and their personal data to facilitate identification. Such books/cards shall be issued by the Indian companies to the foreign crew at the time of naval inspection and retrieved at the time of customs clearance. These shall be made available to the crew on the vessels re-entry into Indian waters alongwith other documents. In case of new crew, fresh books/cards shall be issued. Such documents shall be kept in the custody of the skipper and shall be accounted for.

22. The charterer shall furnish to the Government of India voyage-wise statement of fish catch and exports from the fishing vessels with all the necessary details as required in the prescribed proforma.

23. The Indian company shall furnish 10 copies of the list of particulars of its employees, both foreign and Indian, and also 10 copies of the list of particulars of foreign personnel employed in the chartered vessels. Any change in the personnel and equipment/machinery on board the chartered vessels or in the shore establishments shall be reported to the Department of Agriculture and Cooperation.

24. The fishing vessels and their appurtenances, fish catches, exports, fuel, lubricants, spare parts, packing materials, fishing materials, etc. will be subject to duties and taxes as may be applicable under the Indian Laws. If the fuel charges are to be borne by the foreign collaborator, payment shall be made in foreign exchange by the foreign collaborator.

25. Prior to the commencement of the fishing operations, the foreign collaborator shall produce revolving and confirmed letter of credit in favour of the Indian company or make advance payments to the Indian party toward the value of the catch after deducting the proportionate charter fee for each voyage.

26. The applicants shall be issued a letter of intent for preparing themselves for satisfactory compliance of pre-operational formalities, such as security aspects and training. Only when the Government are satisfied about the fulfilment of these formalities, a letter of permission shall be issued for commencement of operation.

27. Violation or non-fulfilment of any of the conditions stipulated above before commencement of fishing operations and during the fishing operations shall result in cancellation of the permission issued.

28. The charterer shall confirm to all the existing Government of India's Acts/Orders requiring operators of vessels to obtain licences or permissions for various equipment/facilities/radio frequencies individually or collectively.

29. The Government reserve the right to stipulate such additional conditions as may be considered necessary or to modify the conditions stipulated above.

## ANNEXURE—II

### IMPORTANT INDIAN REGULATIONS AND CONCESSIONS CONCERNING JOINT VENTURE IN DEEP SEA FISHING WITH FOREIGN COLLABORATION

The basic policy of the Government of India is to welcome foreign investment on a selective basis in fields in which such investment would be of advantage to the Indian economy. One of the fields covered in the selected items is deep sea fishing. The Indian regulations concerning Joint Ventures with foreign collaboration are as follows:

#### 1. Equity participation

Foreign equity participation upto 40% is allowed either in cash or kind. In the case of export oriented industries and industries requiring sophisticated technology such as deep sea fishing, majority participation may be considered on merits. The foreign share capital should be by way of cash without being linked to tied imports of machinery and equipment or to payment for know-how, trade marks, brand names, etc.

#### 2. Technical Collaborations

The collaboration agreements are approved normally for a period of five years from the date of agreement or five years from the commencement of production provided production is not delayed for a period of three years from the signing of agreement. Extension of the duration is agreed on merits and if the Government is satisfied that the technology transferred is not properly assimilated in an industry under consideration or the agreement relates to export oriented industry. There should be provision in the agreement that there would not be any restriction on the Indian company in the matter of procurement of capital goods, components, spares, raw materials, pricing policy, selling arrangements, etc. The collaboration agreement should not place any export restriction on the Indian party, without valid reasons, the Indian party will be free to export to any countries except when the collaborator has sub-licensing arrangements. There should be no provision for use of foreign brand names on products for internal sale, although there is no objection to their use on products to be exported. In case any consultancy is also considered necessary, any Indian consultancy firm should, nevertheless, be the prime consultants.

#### 3. Export oriented industries

Foreign investment and collaboration are liberally welcomed in industries which are predominantly export oriented and where the link with foreign collaborator will provide an avenue for export 100% export of all exportable marine products.

#### 4. Procedure

Entrepreneurs desirous of setting up of an industry with foreign collaboration has first to obtain a letter of intent. Entrepreneurs have to apply to the Foreign Investment Board for the issue of a letter of intent.

#### 5. Industrial Licensing

Fishing as such is not a licenseable industry in India. However, the shore establishments for processing of marine products have to be covered by an Industrial licence to be issued by the Government of India. Small and medium entrepreneurs whose investment does not exceed Rs. 10 million in land, buildings, plant and machinery are generally exempt from licensing. In order to reduce the delay involved, Government have decided that it will be sufficient to apply for capital goods and foreign collaboration clearances straight a way for schemes which are eligible for exemption from industrial licensing. Such units, will, however, require registration with the concerned authorities such as the Directorate General of Technical Development etc.

#### 6. Employment of Foreign Technicians by Joint Ventures

Employment of one fishing technician, and one engineer on each fishing vessel operated by the Joint venture company is allowed. The employment of one fleet manager, in case the number of vessels operated exceeds two, is also permitted.

#### 7. Flags to be flown on vessels operated by Joint Ventures

If the vessels are owned by the Joint Venture company they have to be registered in India and fly the Indian flag. If the vessels are chartered, they may fly the flag of the country of registration during the charter period.

#### 8. Conditions governing the operation of the fishing vessels by Joint Ventures

- (i) The vessels should operate beyond the range of operations of mechanised and non-mechanised fishing boats and as per the directions given by the Government from time to time.
- (ii) The full list of the main items of equipment and machinery including acoustic equipment and communication equipments should be furnished to the Government.
- (iii) The vessels should start operation only after they are inspected by the nominated officials of the Government of India and duly cleared by them.
- (iv) The full list of the names, nationalities and qualifications of all the crew members should be furnished to the Government.
- (v) The foreign personnel should be employed only after obtaining specific clearance of the Government. The Indian counterparts should make arrangement for the training of Indian counterpart personnel under the foreign technicians.
- (vi) The Joint Venture Company should furnish once in a quarter full particulars of the date of fishing operations gathered during the period.
- (vii) Government will have the right to inspect the vessels at any time.
- (viii) The foreign collaborator should undertake to provide full technical and managerial know-how to the Joint Venture enterprise.

The position concerning concessions and incentives given to Joint Venture enterprises is broadly as under:—

#### *Concessions*

1. No discrimination is made against foreign capital once it is admitted into the country.
2. Remittance of profits and dividends is freely allowed.
3. The repatriation of foreign capital investment is allowed freely together with profits ploughed back and any capital depreciation in the value of investments.
4. Fisheries technicians/engine drivers/fleet managers are exempt from income-tax on remuneration upto Rs. 4,000 per month for an initial period of two years. The remuneration in excess of Rs. 4,000 per month will be liable to tax. If the employer pays the tax on such excess remuneration the perquisites represented by such payment of tax by the employer will also be exempt from further taxation in the hands of the technicians. In the initial period of two years from the date of arrival in India the whole of the remuneration of the technician will be subject to tax. However, if the employer pays the tax on his remuneration, the perquisites represented by such payment of tax by the employer will be exempt from further taxation in the hands of foreign technicians for further period of two years.
5. Tax holiday is given for newly established industrial undertakings. The profits of a new industrial undertaking is exempted from tax upto 7½% per annum on the capital employed as computed under the rules prescribed.

The deduction from profits upto 7½% is allowed from the years of commencement of the business in the next four years. If the profits are in excess of 7½% such excess is taxed. Where there are no profits or where the profits fall short of the capital employed, such deficiency in profits is allowed to be carried forward and set off in the subsequent years up to the end of the eighth year, including the initial year of assessment. While the carry for-

ward is permitted up to the end of the eighth year the deduction upto 7½% of the capital is limited to five years. These concessions will, however, be available only when the company is not formed by the split up or reconsideration of a business already in existence, it is not formed by the transfer to a new business or a building, machinery or plant and employs 10 or more workers in a manufacturing process carried on with the aid of power (Section 80 J of Income Tax Act, 1961).

6. Inter-corporate dividends received by the foreign company from the Indian Company are taxed at 25% (Section 118A of Income Tax Act, 1961).
7. Depreciation allowance is granted to taxpayers on buildings, furniture, plant and machinery at prescribed rate. This varies from 2.5% to 100% depending on the nature of the item.
8. Under the existing provision of the Income Tax Act, interest payable by an industrial undertaking in India on moneys borrowed by it under a loan agreement entered into with any approved financial institution in a foreign country is exempt from income tax. Interest payable by industrial undertaking in India on any money borrowed or debt incurred in a foreign country in respect of purchase outside India of raw materials or capital plant and machinery is also exempt from tax, to the extent to which such interest does not exceed the amount of interest calculated at the rate approved by the Central Government in this behalf. (Section 10(15)IV of the Income Tax Act, 1961).



JICA

