Chapter - 6

Marketing of Agricultural Inputs
SIX
Marketing of Agricultural Inputs

Having seen that agriculture and allied activities are the mainstay in rural India inasmuch as they account for 75 per cent of rural income with 72 per cent of the rural population directly engaged in this activity, agricultural inputs marketing has been a big business. In traditional or subsistence farming, there was no need for any externally produced inputs and all the requirement was produced on the farm or in the village itself. With the advent of new technology in agriculture, leading to commercialisation and market-orientation of farms, the farming system is exposed to external economics in terms of procurement of inputs required for production and marketing the agricultural production. A number of corporate bodies are engaged in the manufacture and marketing of agricultural inputs like fertilizers, pesticides/insecticides, seeds, oil engines, electric motors and pump sets, tractors and other related equipments. It is estimated that the agricultural inputs business is approximately of the order of about Rs. 1,20,000 million per annum.

The agricultural inputs can be classified into two categories - Consumable Inputs and Durable Inputs. Consumable inputs include
fertilizers, pesticides, seeds and the like, which are required for farming, season after season. Durable inputs include tractors, motors and pump sets, major farm machinery items like harvesters, threshers, winnowers, which are probably purchased once in the life time by a farmer.

The various inputs which fall under these two categories are listed below:

*Consumable Inputs*

1. Plant Food (Manure and Fertilizer)
2. Soil Amendments (Calcium and Gypsum)
3. Plant Protection Chemicals (for pests and diseases)
4. Seeds (High yielding, hybrid and improved varieties)
5. For Power Generation (Diesel, oil, petrol and electricity)
6. Feed (for cattle, poultry)
7. Veterinary Medicines (Prophylactic and Curative)
8. Simple hand-held farm tools (Pavada, Sickle, hand hoe, crowbar)
9. Packing Material (Gunnies, rope, twine)
10. Others (Bamboo articles like baskets etc.)
**Durable Inputs**

1. Farm Implements (Tractors, harvesters, threshers, power tillers)

2. Irrigation Equipments (Motors, pump sets, sprinklers)

3. Construction Materials (Cement, bricks, zinc/asbestos sheets for roofing)

4. Transportation Equipments (Bullock carts, tractor trailers, mini trucks)

5. Farm Animals (Bullocks, cows poultry, goats, sheep)

6. Others (Tyres, tubes spare parts)

An approximate estimate of value of consumption of some major inputs are presented in Table 6.1.
Table 6.1

Approximate Value of Major Agricultural Inputs Consumed

(Value in Rs. million)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Fertilizers</td>
<td>5,000</td>
<td>25,000</td>
<td>75,000</td>
</tr>
<tr>
<td>2.</td>
<td>Pesticides/Insecticides</td>
<td>400</td>
<td>2,000</td>
<td>10,000</td>
</tr>
<tr>
<td>3.</td>
<td>Tractors and Agricultural Machinery</td>
<td>1,500</td>
<td>1,500</td>
<td>10,000</td>
</tr>
<tr>
<td>4.</td>
<td>Pumps Sets, Oil Engines</td>
<td>1,000</td>
<td>1,500</td>
<td>5,000</td>
</tr>
<tr>
<td></td>
<td>Electric Motors</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Seeds</td>
<td>8,000</td>
<td>14,000</td>
<td>20,000</td>
</tr>
<tr>
<td>6.</td>
<td>Total</td>
<td>15,900</td>
<td>44,000</td>
<td>1,20,000</td>
</tr>
</tbody>
</table>

Table 6.1 gives the size of the rural agro-inputs market. It would be interesting to study and understand the marketing of these agro inputs since the marketing practices vary widely. Some of these inputs have to be marketed as per the directions of the Government, while others enjoy a free and unrestricted market. The marketing mix adopted by the
manufacturers and marketing men for some of the important inputs are described below.

1. Fertilizers

Over the years, the market for fertilizers has developed significantly. In the early fifties, fertilizers were not acceptable to farmers because of wrong notions. The expansion efforts of the Government and fertilizer companies have ensured a phenomenal growth. Today about 13 to 14 million tonnes of fertilizer nutrients valued at about Rs. 75,000 million are absorbed. The target is to reach a consumption level of 20 million tonnes by 2000 AD.

Fertilizer market is a typical example of exploitation of potential of rural market. During the year 1951-52, when fertilizer was totally a new input to farming, the consumption was only about 66,000 tonnes, which grew to 3,38,000 tonnes in 1961-62. Fertilizer consumption showed further increases in 1981-82, when it touched 2.66 million tonnes and during 1991-92 the consumption was 6.07 million tonnes. The market is still growing and the consumption was 13 tonnes in 2001-02. This is further expected to grow to 20 million tonnes by the end of this century.

The fertilizer consumption depends upon several factors like:

• Profitability of farming

• Availability of irrigation facilities

• Introduction on new technology

• Availability of fertilizers

• Prices of fertilizers

Fertilizers are classified into three different groups depending upon the nutrients they supply to the crop like Nitrogenous (N), Phosphate (P) and Potassic (K). The fertilizers which supply only a single nutrient like N or P or K are called straight fertilizers. Examples of such fertilizers are ammonium sulphate, urea, calcium ammonium nitrates (which supply only the nutrient of Nitrogen) and single super phosphate, triple super phosphate (which supply phosphate). The fertilizers which contain more than one nutrient are called Compound and Complex Fertilizers. For example, Di-Ammonium Phosphate (DAP which is quite popular now) is a complex fertilizer which supplied both Nitrogen and Phosphate. In addition there are fertilizer mixtures which supply all the three nutrients in proportions required by different crops and different region.

Marketing of fertilizers is highly controlled by Government regulation. Fertilizers are governed by both Essential Commodities Act (ECA) and Fertilizer Control Order (FCO). Under these Acts, fertilizers
have to be marketed only on generic name and not by any trade or brand name. What the companies normally do is to add their company name to the generic name like Mangala Urea (Manglore Chemicals and Fertilizers Ltd.) SPIC Urea (Souther Petrochemical Industries Corporation Ltd.). In addition, they also use a symbol or a logo so that the rural consumer can recognise the brand. Manglore Chemicals Fertilizers Ltd. uses a 'Poorna Kumba', which as a symbol is identified with the company.

Under the Essential Commodities Act (ECA) and Fertilizer Control Order (FCO), the government is empowered to allocate the quantum and territories to various manufacturers. The manufacturers are obliged to sell only such allocated quantities in allocated territories only. Thus for a manufacturers the market and the product or products and the quantity is decided by the Government under ECA. FCO empowers the concerned State Governments' Agricultural Departments to test the quality of fertilizers. Each type of fertilizer should contain a specified percentage of the nutrient. For example, Ammonium Sulphate should contain 26.6 per cent of Nitrogen. This has to be clearly indicated on the bag itself. This could be tested by the Agricultural Department of different states under FCO.

Fertilizers have to be uniform price throughout the country and selling prices are notified by the Government for different fertilizers. Since the Government fixed the price of fertilizers, a fixed return on investment is
guaranteed to the fertilizer manufacturers which is given as subsidy. Thus the government determines the retention prices payable for different manufacturers and they are entitled for a subsidy, as per the retention price scheme. The government also prescribes the transport/cost/equated freight payable for the fertilizers produced and transported by different manufacturers. The manufacturers are expected to transport the production within the equated freights fixed by the Government. If they exceed these limits, the excess cost will cut into their profits/margins. The specified transportation modes include rail and road for transit of fertilizers from factories to allocated marketing territories. The policy also prescribes that rail transportation should be full rake loads up to single destination and from this point road transportation can be used for further dispersal.

The government policy also prescribes the distribution margins payable to the channel members in respect of each variety of fertilizers. The government further insists that fertilizers shall be delivered freight paid up to block headquarters level. Since the Government inform several restrictions on fertilizer marketing the manufacturers are entitled for subsidies on many accounts. The subsidy on fertilizer distraction and marketing has reached an alarming level of Rs. 5,000 crore per years during the Eighth Plan period.

Fertilizer imports from countries like Germany, Jordan, USA, USSR,
Japan and others take care of the gap between the demand and supply.

With all these controls on fertilizer distribution and prices, the fertilizer industry has done extremely well. This is mainly due to the coordinated extension efforts of the government (both Central and State) and the fertilizer manufacturers. The adoption of the traditional marketing mix in the case of fertilizer is discussed below:

**Product**

Not much manoeuvrability is possible for the manufacturers and marketing men in product designing. At the most they can manufacture and market fertilizer mixtures which supply the three nutrients in a proportion that is required by certain types of soils or crops or regions. These are called Paddy mixture or Sugarcane mixture but the bags should clearly indicate the proportions of the three nutrients, e.g. there could be a mixture as 20:20:20 which means the mixture contains N, P and K in that proportion. Some of the manufacturers add to this mixture certain amount of trace elements like Sulphur. In addition, some of them manufacturer granulated fertilizers, or fertilizers coated with neem which release the nutrients slowly for long lasting action. Thus the product manoeuvrability is very limited in the case of fertilizers. The basic purpose of any product under fertilizer category is to supply N, P and K nutrients.
Price

Prices are totally controlled by the Government including the margins for channel members and the companies may offer to their dealers volume discounts or offer to their dealers volume discounts or off-season discounts at the most. This is very closely watched by the Government and any such rebates have to be borne by the company as the subsidy will not cover such discounts.

Distribution

Here again, the Government policies dictate the type, quantum and the area for distribution for each manufacturer. Therefore, the manufacturers do not have much say in distribution.

Most fertilizer manufacturers use distribution networks to reach the fertilizers to end users. Traditionally, the Cooperatives and Agro Industries Corporations played a significant role, but of late private trade has also taken to the fertilizer distribution in a big way because of attractive margins. Earlier the proportion of fertilizer distributed between the cooperatives and private trade was in the ratio of 60 : 40. Presently the trend is reversed and private trade accounts for 60 per cent, while Cooperatives and Agro Industries Corporations for only 40 per cent. So mostly the fertilizer marketing is through a dealer network which consists of cooperatives, agro-industries corporations and private trade. A few manufacturers have their
own retail outlets also - Fertilizers and Chemicals of Tranvancore (FACT) in Kerla, and GSFC in Gujrat. Sometimes the retailers pass on fractions of their margins to actual users.

Promotion

In the case of fertilizers, the one element of marketing mix 'promotion' allows the manufacturers to use their ingenuity not only to sell the quantity allocated to them but also create a brand image. Various promotional measures are adopted by different fertilizer manufacturers and marketing men.

1. Inter-Personal and Group Contacts

Right from house to house contact campaigns, to discussions with small farmer groups are adopted by fertilizer manufacturers. This is also combined with training programmes for the farmers.

2. Mass Media

Mass media has also been extensively used by fertilizer manufacturers to promote their product. Advertisements in vernacular press and journals, literature on crops and products in the form of pamphlets, and folders are quite popular. Radio has been very extensively used, especially before and after farm programmes like Krishi Darshan and Farm and Home programmes. Other measures include, visuals like hoardings, posters,
paintings on the bullock carts in rural areas and point of purchase materials. They also take part in exhibitions and fairs.

In additional many manufacturers use their own Audio-Visual vans through which they screen films interspersed with fertilizer advertisements, slide shows, puppet shows and other forms of entertainment like film music and the like.

Of late, advertising through Television is also used by some manufacturers, especially when farm programmes are telecast. This appears to be important in as much as Television is supposed to cover about 90 per cent of the population.

3. Special promotion Measures

Many fertilizer manufacturers resort to special promotion drives. These could be Result and Method Demonstrations in the farmers' fields, arranging for field visits of farmers to research centres and progressive farmers' fields, free soil testing services through mobile soil testing laboratories, literature on agro-techniques for specific crops, farmers service centres, organizing farmers clubs for exchange of information on cultivation practices, visits to fertilizer factories and dealers' training programmes. Some manufacturers even institute awards for farmers getting highest yields in specific crops on the lines of Krishi Pandit awards. The latest promotion measure is 'Village Adoption Programmes'. The manufacturers adopt
villages with an aim to promote an all round development. Such Village Adoption Programmes cover a wide range of activities like distribution of tree seedling, health care, youth and women programmes, advice on crop cultivation and marketing and similar development activities. Even the commercial banks involved in rural financing go in for Village Adoption Programmes either independently or with some fertilizer manufacturers. Such programmes not only aim to increase fertilizer consumption but also other people-related activities. This can be termed as 'Social Marketing' which is discussed in a subsequent chapter.

In short, the promotion measures adopted by fertilizer manufacturers are innovative and worth being emulated by others involved in marketing of consumables and durables also. The main advantage with fertilizer is that the Agricultural Departments of the Centre and State Governments do play a major role in advising the farmers with regard to the usage, in addition to the cost-benefit advantage.

*Changing scenario in Fertilizer Marketing*

Since 2001-02, the fertilizer market has undergone a phenomenal change, with the government's decision to slowly phase out the Rs. 5,000 crore subsidy given to fertilizers. Still the nitrogenous fertilizers are reasonably priced, but the prices of phosphatic and potassic fertilizer have gone up substantially due to decontrol. This has pinched many manufactures
and sales have come down. From the past experience, this phenomenon can be interpreted as temporary and one can hope that the demand will pick up in future. The prices of agricultural products have also undergone upward revision in relation to the cost of cultivation. This is expected to offset and increase in fertilizer prices. When fertilizer prices went up during the oil crisis in the year 1970-71 the demand declined initially, but picked up later. Hence it can be argued that the demand for fertilizers will grow in future and the present position should be considered as a temporary phase. It is likely that the fertilizer industry may be totally decontrolled in the near future. The manufacturers and marketing men have to prepare themselves for such an eventuality when all the four Ps of marketing mix will be totally under their control. It is unfortunate that the fertilizer industry is unable to visualise a totally decontrolled market due to the protection given to farmers. It is time the industry comes out of such a mindset and thinks in terms of marketing and competition in a true sense.

As of now, there appears to be no threat to the ever expanding market of fertilizers. But research is underway to develop 'Bio-fertilizers', which are supposed to be more environment friendly and can be produced at lesser costs. Some bio-fertilizers like Rhizobium, Blue-Green Algae, etc. are already in the market. The bio-fertilizers being cheaper, there is a likelihood of bio-fertilizers catching up and the market for chemical fertilizers declining. As of today, this appears to be a distant possibly, given the
technology and need for accelerating agricultural production.

The scope for increasing fertilizer consumption in the the country is enormous which is justified by the follow facts:

First, there is a need for increasing the food grains production to 200 to 225 million tonnes by 2000 AD to feed the growing population. With the income levels rising, there is always a switch from inferior food grains to superior food grains like wheat and rice. Land area being fixed or even reducing due to other demands for land like industry and housing, higher productivity levels have to be achieved. Given the present level of technology, improved seeds, irrigation and fertilizer can only achieve appreciable increases in production. While evolving new varieties and extension of irrigation facilities take a long time, fertilizers is the only alternative to achieve a quick increase in productivity and production. Hence the fertilizer consumption is expected to grow to about 20 million tonnes from the present level of 113 million tonnes.

Next, the present levels of fertilizer application to various crops are low not only when compared to the recommendations by research stations but also when compared to the levels of consumption in other developing and developed countries. The following table presents the fertilizer consumption in kgs per hectare in selected countries.
Table 6.2

Fertilizer Consumption in Different Countries 1997-98

(Kgms/Hectare)

<table>
<thead>
<tr>
<th>Sl No.</th>
<th>Country</th>
<th>N</th>
<th>P</th>
<th>K</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Pakistan</td>
<td>49.7</td>
<td>15.3</td>
<td>1.7</td>
<td>66.7</td>
</tr>
<tr>
<td>2.</td>
<td>Bangladesh</td>
<td>48.6</td>
<td>18.4</td>
<td>5.3</td>
<td>72.3</td>
</tr>
<tr>
<td>3.</td>
<td>Chin</td>
<td>40.8</td>
<td>11.1</td>
<td>3.2</td>
<td>55.1</td>
</tr>
<tr>
<td>4.</td>
<td>Egypt</td>
<td>264.5</td>
<td>72.4</td>
<td>13.7</td>
<td>350.6</td>
</tr>
<tr>
<td>5.</td>
<td>Japan</td>
<td>125.3</td>
<td>143.4</td>
<td>112.7</td>
<td>381.4</td>
</tr>
<tr>
<td>6.</td>
<td>Europe</td>
<td>69.9</td>
<td>34.8</td>
<td>37.5</td>
<td>142.2</td>
</tr>
<tr>
<td>7.</td>
<td>Korea Repb.</td>
<td>202.3</td>
<td>95.2</td>
<td>108.7</td>
<td>406.2</td>
</tr>
<tr>
<td>8.</td>
<td>India</td>
<td>32.2</td>
<td>12.7</td>
<td>5.1</td>
<td>50.0</td>
</tr>
</tbody>
</table>


As is evident our consumption is lower than even some Asian countries. The scope for expanding the market is very promising.

These apart the fertilizer consumption in the country is not uniform
and is concentrated in about 200 districts. Also, there are wide variations among states, districts and even villages. Many districts which are arid region may not offer much scope for increasing the same. Table 6.3 gives the number of districts and their share in total fertilizer consumption.

Table 6.3

Classification of Districts According to the Share in Total Consumption of Fertilizers 1998-99

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>No. of Districts</th>
<th>Proportion to Total Consumption</th>
<th>Cumulative Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>8</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>2.</td>
<td>12</td>
<td>10</td>
<td>20</td>
</tr>
<tr>
<td>3.</td>
<td>15</td>
<td>10</td>
<td>30</td>
</tr>
<tr>
<td>4.</td>
<td>18</td>
<td>10</td>
<td>40</td>
</tr>
<tr>
<td>5.</td>
<td>22</td>
<td>10</td>
<td>50</td>
</tr>
<tr>
<td>6.</td>
<td>24</td>
<td>10</td>
<td>60</td>
</tr>
<tr>
<td>7.</td>
<td>30</td>
<td>10</td>
<td>70</td>
</tr>
<tr>
<td>8.</td>
<td>37</td>
<td>10</td>
<td>80</td>
</tr>
<tr>
<td>9.</td>
<td>22</td>
<td>5</td>
<td>85</td>
</tr>
<tr>
<td>Total</td>
<td>188</td>
<td>85</td>
<td>85</td>
</tr>
</tbody>
</table>
Out of about 400 districts in the country, 85 per cent of the total consumption of fertilizers is accounted for by 188 districts only. Thus, there is immense scope for extending the fertilizers to other districts. In addition, the area under irrigation is also expanding, with investments in minor, medium and major irrigation projects. This will also help increase fertilizer consumption. The proposed Sardar Sarovar Project across the river Narmada is estimated to increase the irrigated area by about 19 lakh hectares in Gujarat, Madhya Pradesh and Maharashtra, which will offer vast potential for fertilizer consumption.

Lasts but not the least, is the proportion of fertilized area to gross cropped area and proportion of farms fertilizers. This presents a very interesting picture.
Table 6.4

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Size Group in Hect.</th>
<th>Proportion of Holdings %</th>
<th>Proportion of Fertilized Area to Gross %</th>
<th>Fertilizer Input in Kgms per Hectare</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Below 1</td>
<td>36.8</td>
<td>31.3</td>
<td>92.3</td>
</tr>
<tr>
<td>2</td>
<td>1 to 2</td>
<td>44.8</td>
<td>32.7</td>
<td>85.8</td>
</tr>
<tr>
<td>3</td>
<td>2 to 4</td>
<td>55.3</td>
<td>36.1</td>
<td>80.1</td>
</tr>
<tr>
<td>4</td>
<td>4 to 10</td>
<td>55.4</td>
<td>35.2</td>
<td>71.1</td>
</tr>
<tr>
<td>5</td>
<td>10 &amp; above</td>
<td>58.8</td>
<td>34.2</td>
<td>59.0</td>
</tr>
<tr>
<td>6</td>
<td>All holding</td>
<td>45.2</td>
<td>34.4</td>
<td>76.4</td>
</tr>
</tbody>
</table>


It is seen that on an average only about 45 per cent of the agricultural holdings use fertilizers, which is again restricted, approximately to one third of the gross cropped area in the holdings (Table 6.4). Further, the consumption of fertilizer per unit areas varies from 59.0 kg. to 92.3 kg.
per hectare in different size groups.

In typical marketing jagron, it can be said that there is scope

(a) to bring in new holding to use fertilizer (New accounts)

(b) to encourage more area to come under fertilizer application and increase the consumption where fertilizers are already being used (increase the consumption of existing accounts).

The ever expanding market for fertilizers calls for innovative and effective marketing strategies. With subsidy being withdrawn slowly, the manufacturers have to think and evolve innovative marketing strategies. It will be wishful thinking if the fertilizer industry gets completely decontrolled in the future. In such an eventuality, all the elements of marketing mix will be under the control of the manufacturers and marketing men, which would necessitate evolution of appropriate strategies.

2. Pesticides/ Insecticides

The chemicals used for control of pests, diseases, rodents, virus, etc. are broadly termed 'agricultural chemicals'. The agricultural chemicals market can be classified as follows:

(a) Insecticides

(b) Fungicides
The agricultural chemicals market comprises insecticides that account for about 80 per cent, Fungicides 15 percent and the rest 5 per cent, of the total market. The manufacturers of agricultural chemicals are of two kinds - manufacturers of technical grade material and formulators.

There are about 79 licensed manufacturers of technical grade material, out of which only about 51 are estimated to be active. Nearly 10 out of 51 manufacturers alone account for about 80 per cent of the production of technical grade material. In 1985-86, the installed capacity for manufacture of technical grade material was 1,02,328 tonnes out of which only 68 per cent was utilized. But the agricultural chemicals market has been growing steadily at about production of technical grade materials, which was only 19,280 tonnes in 178 increased to about a lakh tonnes in 1995-96.

The formulators buy the technical grade materials and prepared various formulations buy the technical users in different concentrations for different crops and also for different types of pests and diseases. There are about 800 formulators in the country. It is estimated that there are about 77,080 sale points for agro chemicals. Out of this 55,879 are privately run, 16,237
are run by cooperative and 4,973 outlets by respective State Governments.

All the manufacturers and formulators have to register themselves with the Central Insecticides Board under the Insecticides Act of 1968. The banned insecticides should not be manufactured or sold, e.g. DDT was banned in the country in October 1999. Apart from this, the formulators are free to adopt any trade or brand name for the products manufactured. Hence the same chemicals are sold on several trade or brand names by different companies.

Nearly 50 per cent of the sale points for agrochemicals are concentrated in four or five stages, viz. Andhra Pradesh, Uttar Pradesh, Gujrat, Tamil Nadu and West Bengal. As in the case of fertilizers, the consumption of agro chemicals is also concentrated in certain states. This is of course dictated by the crops grown and their susceptibility to pests and diseases, e.g. cotton and paddy alone account for nearly 65 per cent of the agricultural chemicals varies widely across different states (Table 6.5).
<table>
<thead>
<tr>
<th>Sl.No.</th>
<th>Name of States</th>
<th>Proportion to Total (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Andhra Pradesh</td>
<td>33.6</td>
</tr>
<tr>
<td>2.</td>
<td>Karnataka</td>
<td>16.2</td>
</tr>
<tr>
<td>3.</td>
<td>Gujrat</td>
<td>15.2</td>
</tr>
<tr>
<td>4.</td>
<td>Punjab</td>
<td>11.4</td>
</tr>
<tr>
<td>5.</td>
<td>Maharashtra</td>
<td>5.1</td>
</tr>
<tr>
<td>6.</td>
<td>Haryana</td>
<td>4.7</td>
</tr>
<tr>
<td>7.</td>
<td>Tamil Nadu</td>
<td>3.6</td>
</tr>
<tr>
<td>8.</td>
<td>West Bengal</td>
<td>2.9</td>
</tr>
<tr>
<td>9.</td>
<td>Orissa</td>
<td>2.0</td>
</tr>
<tr>
<td>10.</td>
<td>Uttar Pradesh</td>
<td>1.7</td>
</tr>
<tr>
<td>11.</td>
<td>Kerala</td>
<td>1.3</td>
</tr>
<tr>
<td>12.</td>
<td>Madhya Pradesh</td>
<td>1.0</td>
</tr>
<tr>
<td>13.</td>
<td>Bihar</td>
<td>0.8</td>
</tr>
</tbody>
</table>
In India the agrochemical consumption is dependent upon several factors - irrigation facilities, types of crops grown, concentration of plantation crops, susceptibility of crops to different pests and diseases. The maximum consumption of agrochemicals is in Andhra Pradesh which alone accounts for nearly one-third of the country's consumption. This can be explained by the fact that the irrigated area is substantial in the State, dependence on paddy and commercial crops like sugarcane, tobacco and chillies, and intensity of cropping. Thus the market for agrochemicals is not uniform. This is further substantiated by Table 6.6 which presents the data on proportion of agrochemicals consumption crop-wise.
### Table 6.6

**Agrochemicals Consumption : Crop Wise**

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Names of Crops</th>
<th>Proportion of Area under the Crop of Total Area (%)</th>
<th>Proportion of Consumption to Total (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Cotton</td>
<td>5.0</td>
<td>27</td>
</tr>
<tr>
<td>2.</td>
<td>Rice/Paddy</td>
<td>24.0</td>
<td>27</td>
</tr>
<tr>
<td>3.</td>
<td>Plantation Crops</td>
<td>0.5</td>
<td>15</td>
</tr>
<tr>
<td>4.</td>
<td>Vegetables</td>
<td>1.7</td>
<td>12</td>
</tr>
<tr>
<td>5.</td>
<td>Sugarcane</td>
<td>1.8</td>
<td>4</td>
</tr>
<tr>
<td>6.</td>
<td>Oilseeds</td>
<td>10.0</td>
<td>4</td>
</tr>
<tr>
<td>7.</td>
<td>Wheat</td>
<td>10.0</td>
<td>3</td>
</tr>
<tr>
<td>8.</td>
<td>Others</td>
<td>47.0</td>
<td>8</td>
</tr>
</tbody>
</table>

Through a crop like cotton occupies only 5 per cent of the total cultivate area, it accounts for 27 per cent of total agrochemicals consumption which indicates its high susceptibility to pests and diseases. The cotton farmers use large quantities of pesticides/insecticides either to control the pests and diseases after the attack or a prophylactic measure to prevent the occurrence.
of pests and disease.

Thus the market for agrochemicals depends heavily on the region and the crops grown therein. Since there are no significant Government controls as in the case of fertilizers, the elements of marketing mix are very much under the control of the manufacturers and marketing men of agrochemicals.

**Product**

The formulators are free to manufacture and market any combination or concentration of insecticides or pesticides from the basic chemicals. They are also free to use any trade or brand name for their products. In other words, flexibility available to the manufacturing or marketing men is very immense. These products need an applicator - the insecticides/pesticides in power form require dusters for application. Even though these applicators are not very expensive, most farmers do not possess them. They either borrow from their neighbours or hire it from agro input vendors. Most cooperative societies at village level and the departments of agriculture of various state governments keep these applicators for custom hiring to farmers. This is a case of providing product-related services without which the product cannot be used effectively.

**Price**

The prices of agro-chemicals are not controlled by the government.
The manufacturers are free to fix the prices. The main consideration in pricing is the strategy of the competitors and the nature of insecticides/pesticides.

**Distribution**

This is the most crucial aspect in the marketing of agrochemicals. Appropriate chemicals have to be made available at the time of pest/disease attack. This requires a reliable method of forecasting the seasons of attack of different pests and diseases depending on the crop growing seasons. In addition most chemicals have a definite shelf life. The marketing men should be able to forecast and move the required chemicals quickly to places where the pest/disease attack is noticed. Fortunately, the chemicals are low volume and high value products unlike fertilizers, which are high value products. This enables quick movement. This is one of the reasons why there are a number of small formulators to supply the products in time than a company having centralised units which may require transportation over long distances. The distribution arrangements for agro-chemicals appear fairly adequate with about 75,000 retail selling outlets. Since most of the chemicals are poisonous and hazardous, packing requirements are of utmost importance along with instructions for the use of products in the field.

**Promotion**

The promotion measures adopted by agricultural manufacturers and
marketing men are nearly the same as for fertilizers. In addition, the agrochemical manufacturers maintain contacts with the Departments of Agriculture and Agricultural Research Stations, since they recommend the farmers the specific names of pesticides/insecticides to be used for different types of pests and diseases. This is highly productive promotion measure adopted by the agrochemical manufacturers.

**Threats**

There appear to be no immediate threat to the agrochemicals market, but this may not be so in the long run. They usage of chemicals on crops in residual effects in the food consumed, which are supposed to be carcinogenic. Thus, a need is felt to develop agrochemicals of biological origin. Extensive research is being carried out in this field. Already some insecticides/pesticides of biological origin are gaining in popularity. These insecticides and pesticides are supposed to be more environment-friendly and harmless to humans and animals. Neem-based chemicals and biological organism are being widely tried. Hence the pesticide/insecticide manufacturers and marketing men should think in terms of developing such eco-friendly products and be market leaders.

3. *Seeds*

Marketing of seeds is an important area wherein lies the key to future. With the entry of multinationals in production and marketing of hybrid and
high yielding seeds, the agricultural scenario is bound to change drastically from self sufficiency also favour seeds marketing with the importance given to Food Processing Industry.

Traditionally the seeds market was in the hands of Central and State Seeds Corporations. In addition, a few private seed companies were also in operation. The responsibility of evolving new varieties of high yielding seeds mostly rested with the government agencies like Agricultural Research Stations and Agricultural Universities of Central and State Governments. These new varieties thus evolved were multiplied and supplied to the farmers by the seeds corporations. These seeds were certified and strict quality control measures were enforced. The corporations distributed their seeds through cooperatives, private dealers and their own sales counters.

With the entry of several multinational seed companies like Cargill and Pet Seeds of USA, Poineer Seeds, Hoechst, Harrison Vanderhave, ITC, Indo-American Hybrid Seed Company, etc. the scenario is fast changing. Simultaneously the Government is also encouraging the food processing industry through several concessions with a view to earn foreign exchange. This has opened the seeds market to multinational companies. For example Pepsi has seeds market to multinational companies. For example Pepsi has encouraged cultivation of high yielding tomato varieties in Punjab to meet their export commitments of tomato puree and paste.
In addition many public limited companies are also engaged in the business of cultivation, processing and sales of vegetables and fruits, both internally and for exports. Maxworth Orchards, ITC, Hindustan Lever, Thatper's Reitzel India, etc. to name a few. Many such corporate bodies are also engaged in the processing and export of fruit and vegetable products, flowers, mushrooms, prawns and cereals. These bodies either have their own captive farms or procure them from farmers on a contract basis. Such activities are expected to increase the demand for seeds considerably.

4. Cattle, Poultry and Aqua Feeds

This is another area where a number of multinational and Indian Companies also are very active (Hindustan Lever and Godrej Agrovet). The milk production in the country got a boost with the implementation of Operation Food Programmes. Similarly, companies like Venkateshwar Hatcheries, Deehay Hatcheries and their franchises distribute one day old chicks for eggs and broilers production. The strains of birds they distribute require proper care and feeding. The farmers who have taken up dairy or poultry have to necessarily purchase feed from organized manufacturers since it takes care of balanced nutrition. Aqua farms for breeding and harvesting shrimps is catching up fast in the country due to the export areas of Andhra Pradesh, Tamil Nadu, Pondicherry, Orissa to establish shrimp farms. The business or export of the agricultural commodities is turning
out to be very profitable and expanding. These activities will increase the
demand for scientifically prepared, balanced feeds. Such animal-based
activities also create a demand for veterinary medicines, both for prophylaxis
and treatment.

5. Tractors

The country produces about 1.5 lakh tractors per annum, which are
sold without much difficulty. These tractors of different horsepower - 25
HP, 35 HP and above 35 HP are manufactured and marketed be major
companies like HMT, Escorts, Eicher, Massey Ferguson, Interantional,
Punjab Tractors, etc. Since the cost involved in purchase of tractors and
the implements in substantial, the dependency is more on loans from the
rural financial institutions. It has been estimated that nearly 90 per cent of
the tractor sales is based on the loans advanced by rural financial institutions
like State Land Development Banks and Commercial Banks. Since such
loans are treated as long term loans, the prospective buyer of the tractor
should be able to offer collateral security to the lending agency. Hence
farmers with sizeable land holdings alone afford to apply for loans which
clearly segments the agricultural machinery market.

While in the case of consumable inputs, all farmers, irrespective of
the size of holding, will constitute the market, in the case of tractors and
other agricultural machinery there is a need to clearly identify the segment
of farmers which can own and use the tractors profitably. The distribution of holding upon the irrigation facilities and types of crops grown. For example, in highly irrigated areas where three to four crops are grown in a year, even a farmer owning and operating in about 20 or 25 acres of land can afford to use the tractor profitably. When the farmer approaches a bank for finance for purchase of a tractor, the bank not only takes into account the possible utilisation of tractor on his own farm, but also the possibility of hiring out the services of the tractors to the neighbouring farmers. Thus most of the farmers who do have large land holding are able to obtain loans for purchase of tractors.

The most important criteria which count in tractor purchase are:

1. Area of land holding
2. Nature of land holding (irrigated/dry)
3. Types of crops grown and number of crops grown in a year
4. Availability of loan
5. Possibility of hiring out the service of the tractor to others
6. Requirement of tractor for transport of produce to market and inputs to the farm

From the marketing point of view the factors which count for successful
sale are:

1. Loan availability from banks

2. Personal selling: identification of potential tractor users and approaching them

3. Trouble free service - less number of breakdowns

4. Availability of spares for easy repairs

5. After sales service

6. Resale value of tractors

7. Training on how to use tractors

8. Fuel efficiency

Most manufacturers and marketing men get themselves registered with the lending agencies as approved suppliers. As and when the farmer is sanctioned loans, the approved suppliers compete among themselves to supply the tractor. The farmer in addition to his investment in tractor (which is only a prime mover) has to invest in implements which can be hitched to the tractor like disc ploughs, levellers, tailors, power spayer, etc.

The farmer require advice with regard to the choice of appropriate horsepower of the tractor. This would depend upon the type of soil, purpose
for which the tractor is purchased and the load it is expected to carry at the time of harvest. The marketing personnel should be in a position to advice the farmers on these following:

1. Finance for purchase of machinery
2. Personnel selling
3. Efficient after-sales service
4. Training in operation of the equipment

6. Irrigation Equipments

Compared to tractors, irrigation equipments are fairly low cost capital equipments. These include a prime mover, either electrical motor or oil engine, pump set and accessories like pipe, couplings, etc. Here again the loan availability is an important factor. Most of the lending agencies prepare a list of approved suppliers of irrigation equipments and once the loan is sanctioned and well is dug, orders are placed with the suppliers by the lending agencies to install the pumps set on the firm. This also requires training in operation and efficient after-sales service. Numerous manufacturers of irrigation equipments are in fray and competition is tough.

The opportunities available in marketing of irrigation equipments are enormous. The tapping of underground water has become necessary for
commercial agriculture. In addition, sophisticated irrigation systems like sprinklers and drip irrigation have come into vogue. These sophisticated systems economics on the water usage, so that the available water can be used to irrigate more area and also wastage can avoided. Even though more costly, these new sophisticated irrigation systems, are bound to prove popular because of economic usage of water which is fast becoming a scarce input.

7. Other Farm Machinery

There is other farm machinery like mould board ploughs, seed drills, winnowers, threshers, harrows etc. These are locally manufactured and marketed. They may be either power-driven or bullock-driven. Many of these are used by farmers regularly in their farming operations. These are readily available, easy to maintain and operate. There are a number of small manufacturers spread out in the country making such machinery, e.g. ELCT Industries, Coimbatore, who make bullock cart mounted thrashers which can be easily moved to the field where harvest is taking place. Since these are locally manufactured and marketed, employment of marketing knowledge is somewhat minimal.

Apart from the above, there are simple farm tools like plough share, hand hoe, sickle, pavada, etc. which are also locally manufactured by the village artisans and blacksmith and sold. These tools have a short life. Hence there is not much quality consciousness among the farmers.
Another important farm machinery which came into being during early sixties is the power tiller. Several firms were licensed to manufacture power tiller and the demand forecast by the Planning Commission communicated great promise. The technology for power tillers was imported from Japan. Somehow this did not succeed much. As of today barring two manufacturers, the rest have ceased to exist. The two manufacturers who are still operating are Kerla Agro Machinery Corporation, and V.S.T. Tillers, Banglore, who produce 'Kubora' and Mitsubishi' tillers respectively. The production is very low, the prices are too high and the performance on the field falls short of expectations. The kits imported from Japan were initially assembled and sold. This has not been nearly failed. A case of power tillers is given at the end of the book. An analysis of this case would reveal the lacunae and problems with this particular farm machinery.

The marketing of major agricultural inputs have been discussed above. These are the inputs which contribute substantially to the value.

There are other inputs like electricity, diesel, lubricants, etc. which are totally under the control of the Central and State Governments. They take special measures to see that the rural areas get these inputs at a concessional price.

The marketing mix, marketing organization and marketing strategies are decided based on three important factors in the case of agricultural
inputs. These are:

1. Product characteristics,

2. User characteristics, and

3. Use characteristics.

The product characteristics in the case of agricultural inputs can be as follows:

a. Consumable input or Capital input.

b. High value of Low volume.

c. High volume or Low volume.

d. High cost or Low cost.

e. Manufactured or Locally produced.

f. High shelf like or Low shelf life.

The user characteristics are:

a. Planters and big farmers.

b. General farmers.

c. Dealers.
d. Blenders.

The use characteristics are:

a. Irrigated farms or Dry or Rainfed farms.

b. Cash crop farms or Food crop farms.

c. Progressive farms or Traditional farms.

d. Market oriented or Subsistence farms.

The characteristics play an important role in deciding upon the elements of marketing mix, the size of the marketing organization and appropriate marketing strategies.