CHAPTER VI

THE AGRICULTURAL SIDE
OF MARKETING
"Agriculture is the source of essential supplies for maintaining a growing industrial population and it is the chief potential source of savings for non agricultural investments".

- Peter Drucker

The acceleration of industrial growth itself will slowdown if there is no surplus of foodgrains for a nation. The agricultural aspects in different countries varies widely due to climatic conditions. For example India is having tropical climate in its southern parts while the north is having subtropical. The European and North American countries are having non-tropical temperate climate. In relation with the climatic conditions the cropping and cultivation patterns vary from place to place.

Turmeric crop needs a hot moist climate, a good supply of sweet water and a well drained soil. So it can be cultivated only in the tropical climate with moist soil condition. The soil must be loose and friable. It is grown in the areas with an assured supply of water.
DISTINCTIVE CHARACTERISTICS OF THE TROPICAL ENVIRONMENT:

"Tropical food crop climate includes all areas in which the average temperature in the coldest month is at least 68°F and for subtropical extends up to 50°F".

Because of the high temperature, greater amount of water evaporates. So there will be high moisture in the air. That is moisture content is very high in the tropical environment. The moisture holding capacity is also high in the tropics.

"The agricultural value of a given rainfall varies with radiation, temperature, length of the day, atmospheric humidity, wind and other factors that influence the return of moisture to the air by way of evaporation".

The rainfall in the tropics are seasonal and the amount of rainfall fluctuates widely. The rainfall in the tropics is .5 inch per rainy day while in England it is .1 inch. The evaporation is high in the tropical region then in the temperate. Rainfall is an important factor in timing and duration for determining agricultural possibilities.

*Demott quoted in "Distinctive features of agricultural Development in the tropics" - W.W. Mc Pherson and Bruce P. 202
The area around Erode in which turmeric is cultivated next to southern parts of Andhra Pradesh, is having a moist soil compared to Karnataka where the soil is dry in nature. The northern parts are having subtropical climate with either dry or moist soil climate. The canals are providing the major resource of water for turmeric cultivation. This facility is possible because of not only seasonal rainfall all around, but also the rain fall in the catchment areas which provide water to the canals is good.

Turmeric, which is traditionally used by the Indian Women for centuries in Cosmetic preparation and in food has become a commercial crop as it is widely used in Ayurvedic Creams & Medicines which has been produced largely on Industrial lines. It is also having medical benefits in it. Mostly it is used in Spices and as a condiment in curry powder, it is also used in medicines taken internally as a stimulant. It also has the medicinal use as a stomach tonic and blood purifier.

PLANT NATURE AND VARIETIES IN TURMERIC:

The plant is a herbaceous perennial with a thick underground rhizome giving rise to short blunt fingerlike
sub rhizomes which is called the "fingers". The main plant grows up to a length of about 15 cm. The raw rhizomes are brownish yellow in colour. The central rhizome is rounded in nature which is called as "rounds" or "roots". From this rounded portion of the rhizome alone a number of sub rhizomes, the fingers are given off. The proportion of rounds to fingers is about 25% by weight. The quality of turmeric is judged by its deep yellow colour and hardness.

The crop is grown either as a pure crop or as a mixture with castor, maize, ragi, onion, bringal or tomatoes. Light shade is good for the crop. The crop needs good soil tilth and manuring. The full growth of the plant needs 9 to 10 months after planting. The yields varies from 10 quintals to 40 quintals according to the soil, temperature, water and climatic conditions.

In wetlands or fields, turmeric is rotated with paddy, sugarcane, banana etc., once in 3 or 4 years. In garden lands it is grown in rotation with sugarcane, chillies, onion, garlic and maize.

CULTIVATION:

The land is ploughed 4 to 6 times to bring the soil
to a fine tilth. The finger variety is cut into pieces of about 5 C.ms., and used for seeding. The round variety is cut into two pieces and seeded. The crop is shown from April to June. In Andhara Pradesh it is cultivated in Godavari delta and Nizamabad areas.

HARVESTING AND CURING:

The land is irrigated, if necessary ploughed in between the rows if the crop is planted on ridges. Otherwise a crowbar is used. The rhizomes are dug up. The roots and fingers are separated. The rhizomes are then boiled in water until white fumes and odour comes. The quality depends also on the curing process. Then it is dried and after drying the turmeric becomes hard. The roots are separated and bits are taken separately.

OTHER AGRICULTURAL ASPECTS:

In agricultural sector the high levels of productivity have been made possible by the accumulation of a vast body of scientific and technical knowledge relevant to soil management and crop. The modern techniques can also be applied in tropical areas too but not in the same manner without alteration and changes, because in temperature, sunlight and soil conditions differ.
Research in the agriculture sector in India has only now picking up. Plant breeding is one of things responsible for high yields. In INDONESIA, the erstwhile Java and WEST INDIES there was huge damages to sugarcane. At that time breeding was done only on asexually. By research in agricultural field, new varieties of seeds were foundout which gave not only higher yield but also they were disease resisting. In India, the maize yield for eight stations jointly operating in the program using most economical fertiliser treatment has averaged over 5600 Kgs of maize per acre compared to a national average of less than 1000 Kgs. per acre during 1955-59.

While the warm condition is useful in many aspects in the tropical areas, there are also problems arising out of the conditions. The pest problem is high due to the warmth compared to temperate climate places. The crops need frequent spraying. The important and neglected problem in the tropics particularly for plants propagated by means of roots or rhizome materials, is nematode infestation which is correlated directly, with soil temperature. It has to be detected in the early stages itself. For this, control by treatments to ensure that the planting material is free of nematodes is practiced.
For turmeric, crop rotation includes host-free plants is an important Measure. G.R. Allen in "The Economics of Marketing", puts it,

"The most promising control appears to be the use of organic phosphates which can be applied in granular form on the surface of the ground provided water is available to drench the material into the soil."

The above mentioned aspect is economical only if the yield is high otherwise surplus income will be reduced by pest control measures. For Weed Control, development of controlled negative cover may offer possibilities. Planting crops in ridges or mounds accelerates soil erosion. Improved farming method for higher yields lessens erosion as soil cover is provided. Bunds or bench terraces can contribute both to the conservation of moisture and to the maintenance of soil fertility. With improvement in moisture status, then it is profitable to apply nitrogen as well as phosphate fertiliser.

IRRIGATION:

Regarding irrigation Kellog puts it,

*McPherson and F. Johnston; Agrl. Devt. in the tropics p. 208.
"adequate water without waterlogging, in the rooting zone when the plants need it" as the first thing for effective farming.

While the ground water is used, salts are left behind after water evaporates from the soil. For this, which by building up affecting fertility, additional applications of water are needed to leach the salts to levels below the rootzone.

According to Shenoi,

"Lack of irrigation is one of the most powerful constraints holding back the increase of agricultural production in India."*

States with highest percentage of irrigation are Punjab with 70%, Haryana and J & K 40%, Tamil Nadu 39% and U.P also with 39%

MAJOR IRRIGATION PROJECTS IN TAMIL NADU:

There are various irrigation projects existing in Tamil Nadu. Of these the Major projects are presented in the following table.

*P. Shenoi - "Agricultural Development in India" p.169
TABLE 6.1
THE MAJOR IRRIGATION PROJECTS
IN TAMIL NADU

<table>
<thead>
<tr>
<th>Name of the Project</th>
<th>Type</th>
<th>Cost</th>
<th>Benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower Bavani Project</td>
<td>Storage</td>
<td>103.4</td>
<td>78.92</td>
</tr>
<tr>
<td>P.A.P.</td>
<td>Storage</td>
<td>675.3</td>
<td>97.13</td>
</tr>
<tr>
<td>Modernising Thanjavur Channels</td>
<td>Storage</td>
<td>225.0</td>
<td>57.90</td>
</tr>
</tbody>
</table>

The two major projects Lower Bavani Project and PAP are situated within Periyar District and the two are providing good water facilities for the turmeric cultivation.

The farmers who have not got access to the canals are only utilising well water resources. The number of masonry wells in and around Erode have been furnished. If drought condition affects due to monsoon failures, the cultivation of turmeric becomes difficult. The well water resources are also used by a large number of farmers in the past 5 years where there was no monsoon failures—except in the last year in the early
stages of 1986 when drought condition affected but only some remote areas where some of the turmeric cultivations are affected. But by large around Erode there was no severe drought condition in the past in and around Erode. The Government assistance is important in providing tubewells to the small and medium scale farmers.

MECHANISATION AND PRICE LEVELS:

Mechanisation becomes must where increase in production depends upon performance of tasks of which labour is incapable without mechanical aid. Mechanisation becomes important when the production is high and in seasonal & peak times.

The price policy is another important factor in marketing agricultural produces. Due to inflation prices of urban and industrial goods including fertilisers the price of the agricultural goods has to be seen that it is in optimum level. The Price policy should be formulated taking every aspects, the big farmers as well as small farmers.

According to Raj Krishna quoted in 'agricultural price policies'.
"Increase in agricultural prices are positive in the economic point of view and is welcomable as period of cultivation of crop is large.*

Particularly turmeric is an yearly crop while in the same time paddy can be cultivated three or two times atleast. The price level for turmeric is fetching good prices while we look at the chapter of analysis. Though excessive speculation is not well but it is good and necessary to certain extent as the goods are distributed also in shortage periods. Speculators have to accelerate or decelerate sales calculating the amount of expectations of future supplies. Another important thing which ofcourse is put in Raj Krishna's words to itself,

"The main thing is that direct regulation of the cost of marketing through fixation of the cost of marketing through fixation of intermediate prices or profit margins is neither necessary nor practicable."

The other factors and problems of the farmers is in the following pages.

D.6.1. Diagram showing the duration of the various crops compared with Turmeric.

I  Turmeric       10-12 months
II  Maize         3-4 months
III Paddy         3-4 months
IV Groundnut      3-4 months
V Sorghum        3-4 months
THE ECONOMIC FACTORS OF THE FARMERS:

The prices of fertilisers and other expenditure for the cultivation of turmeric is increasing over the years though the inflation is under control. Hundreds of crores of rupees are spent every year by the central government on subsidy for the fertiliser. The cost of labour is also on the increasing trend. From the interview it is learned that labour charges has tripled in the past decade, also the cost of fertilisers despite the subsidies from the Government. But regarding the turmeric crop as the demand has increased considerably the prices also rose to a considerable amount nullifying the expenditures. The only problem that may cause concern is that when the prices does not rise to the expected limits in a year, when the arrivals are higher than normal limits. While looking upon the prices, both large scale and medium scale farmers' positions should also be taken into account. The problems of small farmers can be tackled by separate welfare measures. When the prices are looking low there are the commission mandies which can spread the period of consumption and can give the farmers a better deal. The subsidy for fertilisers given by the Government of India for the fertilisers
(for all the crops cultivated in India) is furnished below.

TABLE 6.2

FERTILISER SUBSIDIES GIVEN BY THE GOVERNMENT:

<table>
<thead>
<tr>
<th>Year</th>
<th>On Imports</th>
<th>On domestic production</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1979-80</td>
<td>282</td>
<td>321</td>
<td>603</td>
</tr>
<tr>
<td>1980-81</td>
<td>335</td>
<td>180</td>
<td>515</td>
</tr>
<tr>
<td>1981-82</td>
<td>100</td>
<td>275</td>
<td>375</td>
</tr>
<tr>
<td>1982-83</td>
<td>53</td>
<td>550</td>
<td>605</td>
</tr>
<tr>
<td>1983-84</td>
<td>142</td>
<td>900</td>
<td>1,042</td>
</tr>
<tr>
<td>1984-85</td>
<td>632</td>
<td>1,200</td>
<td>1,832</td>
</tr>
<tr>
<td>1985-86</td>
<td>451</td>
<td>1,600</td>
<td>2,051</td>
</tr>
<tr>
<td>1986-87</td>
<td>250</td>
<td>1,700</td>
<td>1,950</td>
</tr>
</tbody>
</table>
(budgeted)

(Rupees in crores)

Source: The Hindu, 'Commerce, Business and Trade' Section.

The subsidies for fertiliser produced in the country domestically is on the increase from the year of 1979-80, to 1986-87 from a mere 321 crores to Rs.1700 crores for a year. The total subsidies for the last year almost
reaching 2000 crores. But the subsidies for imported fertilisers have been consistent over the years except in 84-85 where it is a little bit high reaching 632 crores. But the import subsidy has been under control compared to the domestic subsidies increase which shows that the domestic production is also is on the increase.

CONSUMER PRICE INDEX:

Consumer price Index if 1960 taken as the base year having the figure of 100, in 1976 it was 286 had crossed 300 by '78; Crossed 400 by 1981; and crossed 500 in 1983; In 1986 by November the consumer price Index is 630. Even if income doubles every seven years it barely keeps pace with inflation, so the 'Money Illusion' does not improve standards of living to a greater extent. So the average man or if an agriculturalist who is farming on below the middle scale level has to face difficulties though the future may not be looking bleak.

THE DEARNESS LEVEL:

The dearness level is Rs.100 in 1981, in 1985 it increased to a level of 129.1 and on January 18th, 1986 it was 135.8 based on wholesale prices of selected essential commodities. The price of gold is on the increase
from 1981, when it was 1670. Now it is over 2120 (per 10 gms) compared to 2100 in February 1985. Similarly the price of Silver in 1981 was 2750 in 1985- Rs.3860 and in 1986, 3953 (per Kg.)

TABLE 6.3

LITERACY OF FARMERS AND THEIR FAMILIES

<table>
<thead>
<tr>
<th>Standard finished or Studying</th>
<th>Number of Persons</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-3</td>
<td>27</td>
</tr>
<tr>
<td>3-6</td>
<td>34</td>
</tr>
<tr>
<td>6-9</td>
<td>38</td>
</tr>
<tr>
<td>9-12</td>
<td>31</td>
</tr>
<tr>
<td>Graduation</td>
<td>14</td>
</tr>
<tr>
<td>Post-Graduation</td>
<td>4</td>
</tr>
</tbody>
</table>

The highest figure in the table is 38 which lies in the class of 6-9. The number of persons educated in below this level is 34 in 3-6 and 0-3 is 27 which is revealing that education level is improving. The persons studying higher levels of stands in the schools are also remarkably high and only graduates and post graduates are little in number. But this is verymuch
a good figure as the education level in the villages in the previous decades would be in much lower level not only in higher level of education in Universities but also in below the graduation level. The farmers are thus, showing improvement in education, the years ahead may also provide them prosperity if the present trend is continued and suitable measures taken.