Chapter-2

Trends in Area, Production and Yield
2.1 General Agricultural Characteristics

Agriculture is the science dealing with farm production, including soil cultivation, water control, crop growing, harvesting, animal husbandry, the processing of plant and animal products, Agro-economics and other related materials.

As agricultural geography deals with agronomic spatial variations in their multilateral context, its scope and relevance can hardly be overstressed. So it is clear that Agricultural geography is the study of agricultural activities of people. There is a considerable variation in agricultural activities in different parts of the earth owing to relief, climate, soil types, and availability of irrigation. As such the study of agricultural geography includes the variations in agricultural activities also.

Agriculture being the predominant sector of economy, the pace of the economic development is directly affected by agricultural development. The contribution of agriculture to economic development lies firstly in:

i) Providing increase food surplus to the rapidly expanding population.

ii) Increasing the demand for industrial products and thus necessitating the expansion of secondary and tertiary sectors,

iii) Providing additional foreign exchange for the import of capital goods for development through increased agricultural exports.

iv) Increasing rural incomes to be mobilized by the state,

v) Improving the welfare of the people.

Agriculture is the largest sector in many developing countries. Most of the developing countries have to depend much upon the
development of agriculture for their economic development in order to meet the demand for food and agricultural raw-materials, to earn foreign exchange for overhead investment and expansion of industries to meet the growing demand for employment and to raise cash income of rural people to stimulate industrial expansion.

In underdeveloped countries food production dominates the agricultural sector. When output expands with increased productivity, it increases the income of farmers. Rise in per capita income leads to substantial rise in the demand of food. In such economics the income elasticity of demand for food is very high, besides the demand for food increases with the expansion of population in towns and industrial areas. Taking these factors into consideration the increase in farm output for food should be at higher rate than the rate of increase of food demand. In a situation where the increased production of agricultural commodities lags behind the growth in demand, for them there will be a substantial rise in food prices. To offset domestic shortage and prevent rise in prices, food may be imported from abroad, but it can be at the cost of capital goods needed for development. Since economic development aims at economic growth and accordingly it is thus obvious that the study of agricultural development becomes important for knowing the economic development. More specifically, it is used to describe not quantitative measures of growing economy but the economic, social or other changes that lead to growth. Growth is the objective. It describes expansion in labour force, in capital, in the volume of trade and consumption. While as economic development can be used to describe the underlying determinants of economic growth such as change in technique of production, social attitude and institutions. Such changes may accelerates economic growth.

Among various aspects of agricultural development, the study of trends is important mainly in revealing a change that takes place in a given period. The study can play a major role in formulating the assessments regarding future planning of the country in governing the prospects of agricultural development. The study can reveal the
pattern of growth in area, production and productivity and ultimate agricultural development can be viewed. However, some literature regarding trends in area, production and yield has not been carried out. The study does not reveal the actual trend and is not having interdisciplinary approaches. Different approaches have been used by different scholars. Agricultural economists have ignored the geographical parameters, while dealing with such kind of study. In the same way Socio-economic variables have not been used by geographers. The studies done on trends can broadly be grouped in the following manner:

i) Trends in Area and Production.
ii) Agricultural production and productivity, growth levels in productivity. Its regional variation.
iii) Variations in agricultural productivity.
iv) Growth Trends.
v) Regional Disparities in Agricultural productivity
vi) Levels of Agricultural Growth
vii) Levels of agricultural productivity.
viii) Measurements of Agricultural Growth.
ix) Agricultural Production Trend and components.
x) Overview of Agriculture.
xii) Agrarian systems
xii) Ecological habitats
xiii) Biodiversity
xiv) General land use
xv) Social stratification
xvi) Environmental constraints
xvii) Economic Review
xviii) Crop Ecology
xix) Institutional system.

The study is available in terms of methodology and objectives, but the coverage is either an oblast or a province not the country as a whole. The chapter aims to analyse the stability and unstability of
agricultural production prevailing within the country, various factors are responsible for such a situation. The study, can also be made in relation to trends in increase in production and increase in yield among various crops prevailing within the country. Besides these objectives, we will also assess whether increase in area is more responsible for the increase in total production or yield increase is more responsible for the increase in total production. In order to make it more easier, area under every crop can be divided into four zones:

i) High yield and high spread.
ii) High yield and low spread.
iii) Low yield and low spread
iv) Low yield and high spread

The Zone of high yield and high spread is considered to be more efficient and low spread, is the most inefficient zone of production. On this basis the most suitable cropping pattern can be identified and over all trend in area production and yield can be formulated.

The data for this analysis relates to the period 1981 to 2005. Thus five year average data has been taken in order to avoid environmental abnormalities. However the present study assas the possibility of increasing food production. The ability to expand food production and raw material govern the performance of agricultural sector. Increased agricultural production is of critical importance especially when both population and income grow in low income countries. The quality of food demand will change the pattern of volume of demand. Therefore, agricultural productivity in terms of quantity and quality must accelerate if future demands are to met."

It has been observed that increase in agricultural production may come from three sources:-

i) Extension of agricultural land.
ii) Increase in yield or intensification method.
iii) Change in cropping pattern or increasing percentage share of high giving crops.

These sources have direct relationship with increased use of fertilizers and irrigation. High cotton production of 1395.9 thousand
metric tonnes was recorded in the period 2001-2005 and the lowest 1250.0 thousand metric tonnes, in the period 1981-1985. Wheat on the other hand recorded a high production of 3272 thousand metric tonnes in the period 2001-2005 and the lowest of 1287 thousand metric tonnes in the period 1981-1985.

In Uzbekistan agriculture accounts for 30.2 percent of Gross Domestic Product and employs about one-half of the labour force. Out of the total area 44,7400 sq.kms about 10.1 percent is arable land. The remaining land consists of barren, mountain, deserts, forests, pastures etc. The total cultivable area is 5.6 million hectares, out of which 62.5 percent is under cultivation. Therefore, the trend in area production and yield will reveal the possibilities of expanding the area under cultivation. An analysis of yield level will reveal the possibility of growth in future. Along with this, it will be more interesting to analyse the agricultural problems in response to population pressure. The study of per unit of land productivity will lead only to the potential exploitation, while per head share in agricultural production will reveal the actual situation and problems of agriculture.8

2.2 Cotton: Trends in Area, Production and Yield

It is obvious from the table (2.1) that the highest area of 1598.0 thousand hectares was recorded in the period 1996-2000 and the lowest of 1520.8 thousand hectares in the period 1981-1985. However, a decreasing trend of -1.07 percent has been recorded in the period 2000-2005. The period shows an increase of 2.44 percent in 1986-1990. Again the period 1991-1995 has recorded an increase of 3.5 percent in area as compared to the period 1986-1990. (Table 2.1).

Trend in production is in almost increasing order, except the period 1991-1995 and 2001-2005. Both these periods have recorded a low trend in production. Out of the remaining periods high positive trend of 8.20 percent was recorded in the period 1996-2000 and low positive trend in the period 2001-2005 (0.72 percent).

The productivity per hectare in all these periods is more or less
uniform. A very low yield of 769.2 kg/hectare was recorded in the year 1981-1985, while the highest yield per hectare was recorded in the period 2001-2005 (825.6 kg/hectare). However, the trend in yield is almost in increasing order, except the period 1996-2000 where the yield has shown a decrease of 1.08 percent over the period 1986-1990. The period 2001-2005 has shown an increase in yield by 2.64 percent over the period 1996-2000 (Fig 2.1).

Overall trend pattern has remained constant in area and yield, but there is a change in the production growth and this growth in production trend has gone high in the period 1991-1995. Onwards from 1991-1995 the production trend has almost remained stable.

### 2.3 Wheat: Trends in Area, Production and Yield

During 1981 to 2005 the total average area occupied by wheat was 1039.3 thousand hectares. This constituted 31.01 percent of the total agricultural area. It is seen from table 2.2 that trend in area recorded by wheat has almost gone in positive direction. However, the high area covered by wheat was 1397.0 thousand hectares during 1996-2000. Onwards during 2001-2005 the area has decreased. Among these positive pentad years the high positive trend has been recorded in the period 1996-2000. Last pentad period of 2001-2005 has recorded a negative trend. The period has decreased by -0.48 percent.

Average production recorded by the crop during 1981-1985 to 2001-2005 was 2081.2 thousand metric tonnes. The trend in production has almost gone in positive direction. Following pentad periods from

### TABLE 2.1

<table>
<thead>
<tr>
<th>Year</th>
<th>Area (000 Hectares)</th>
<th>Production (000 Mt Tonnes)</th>
<th>Yield (Kg/hect)</th>
<th>% Growth Area</th>
<th>Rate of Production</th>
<th>Yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>1981-1985</td>
<td>1520.8</td>
<td>1250.0</td>
<td>769.2</td>
<td></td>
<td></td>
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<tr>
<td>1986-1990</td>
<td>1558.0</td>
<td>1269.3</td>
<td>780.3</td>
<td>2.44</td>
<td>1.54</td>
<td>1.44</td>
</tr>
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<td>1991-1995</td>
<td>1570.8</td>
<td>1281.6</td>
<td>795.7</td>
<td>3.51</td>
<td>0.96</td>
<td>1.97</td>
</tr>
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<td>1996-2000</td>
<td>1598.0</td>
<td>1385.8</td>
<td>804.3</td>
<td>1.73</td>
<td>8.20</td>
<td>1.08</td>
</tr>
<tr>
<td>2001-2005</td>
<td>1580.9</td>
<td>1395.9</td>
<td>825.6</td>
<td>-1.07</td>
<td>0.72</td>
<td>2.64</td>
</tr>
<tr>
<td>Average</td>
<td>1565.7</td>
<td>1316.52</td>
<td>795.02</td>
<td>1.65</td>
<td>2.85</td>
<td>1.78</td>
</tr>
</tbody>
</table>

Source: 1 Computed on the basis of FAO Production Year Book (1981 - 2005)
2 Statistical Year Book (1981 - 2005)
Fig 2.1
Cotton trends in Area, Production and Yield

Source: Computed on the basis of data given on table 2.1
1981-1985 to 2001-2005 have recorded a positive trend in production. Out of these positive pentad periods, high positive trend in production was recorded in 1996-2000 and low positive trend in 1986-1990. (Table-2.2, fig 2.2)

A high average yield kg per hectare was recorded in the period 2001-2005 (2586.76 kg/hect) and low in 1986-1990 (1553.89 kg/hect). Almost all the periods have shown a low positive trend in yield except the period 1996-2000, in which yield increased by 45.94 percent over the period 1991-1995.

During 1991-1995 the trend in yield was in increasing order. The period has shown an increase in yield by 2.90 percent than the period 1986-1990. (Table 2.2). However, high positive trend in yield was recorded during 1996-2000, when the yield had recorded an increase of 45.94 percent. The trend in area production and yield has almost gone in same direction (Fig 2.2). The production trend follows the path of area trend. From 1986-1990 the trend in area as well as in production has gone up. The trend during this period is in upward order and from 2001-2005 area trend has slightly gone down. It is seen from Fig 2.2. That during 1996-2000 the area and the production recorded as 13970 thousand hectares and 3261 thousand metric tonnes respectively.

On the other hand the trend in yield has decreased as compared to that of area and production, but almost following the same path. From 1981-1985 to 2001-2005 the trend in yield was in an increasing
Fig 2.2
Wheat trends in Area, Production and Yield
order. The yield trend has not however gone so high as compared to that of area and production, but has not shown high fluctuation as compared to area and production trend. The trend in area and production has passed through high fluctuation. This fluctuation is more in production trend as compared to that of area trend contrary to cotton, trend in wheat crop has recorded a different growth. Sharp increase in production trend has been recorded from 1991-1995 upto 1996-2000. Onwards also there has been a positive growth yield trend as compared to area also recorded high positive trend but this growth in trend is slightly lower than cotton production.

2.4 Rice: Trends in Area, Production and Yield

Rice has occupied an insignificant area under cultivation. The period 1991-1995 has recorded a positive trend in area (Table 2.3). While as all the remaining periods have shown a low trend in area except 2001-2005. However, high positive trend in production was recorded during 2001-2005. Another period (1991-1995) had also recorded a positive trend. It is thus seen from the table that trend in area as well as production has almost followed the same path. Both area and production trends are in fluctuating order. During 1981-1985 the area under rice cultivation was 150.4 thousand hectares and the production recorded had also reached to insignificant level. From 1986-1990 to 2001-2005 the trend in area as well as in production has shown continuous growth, except the period 1996-2000, when production showed a slight fluctuation. Low area under cultivation has resulted in less production.

On the other hand the yield trend has slightly increased. The trend in yield is almost in increasing order. During 1981-1985 the yield recorded had reached to 2693.21 kg per hectare and has slightly recorded an increasing growth during 1986-1990. In 1996-2000 the yield had slightly gone up and has reached to 2789.33 kg per hectare. Again the yield during 2001-2005 had shown an increasing trend and reached to 2832.31 kg per hectare. On the whole the yield trend of the rice has gone up as compared to that of area and production. Overall
trend in Rice crop during the period under study is different than that of cotton and wheat especially with regard to yield kg per hectare. It is seen from Fig 2.3 that there has been an abrupt increase in yield trend from 1981-1995 to 2001-2005. Positive trend in yield kg per hectare in the rice crop reveals growth stability of crop. Area and production has almost remained parallel and has not maintained high growth trend.

2.5 Barley : Trends in Area, Production and Yield

The total average area occupied by barley during 1981-85 to 2000-2005 was 260.9 thousand hectares. The period 1986-1990 has shown an increase in area by 1.44 percent over the period 1981-1985. Besides the period 1991-1995 has also shown an increase in area by 5.71 percent over the period 1986-1990. Following pentad period i.e. 1996-2000 has recorded a decreasing trend by -18 percent than the period 1991-1995 (Table 2.4). Remaining period i.e. 2001-2005 also recorded a negative trend (-13.47 percent). Out of the positive periods the high positive trend in area was shown by the period 1991-1995 in which the area increase was by 5.71 percent. However low positive trend was recorded during 1986-1990 (Table 2.4).

The total average production recorded by the crop during 1981-1985 was 311.4 thousand metric tonnes. Low negative trend in production was recorded in 2001-2005 period. The high positive trend was recorded during the period 1991-1995 and low positive trend by 1986-1990 (Table 2.4).
Fig 2.3
Rice trends in Area, Production and Yield

Area (000 Hectares)

Production (000 Met.Tonnes)

Yield Kg/hect.

Year:
- 1981-1985
- 1986-1990
- 1991-1995
- 1996-2000
- 2001-2005
- Average
A high average yield recorded by the crop was 1129.57 kg per hectare during 1991-1995, while a low yield of 1072 kg per hectare was recorded during 2001-2005. The trend in yield has undergone much fluctuation (Fig 2.4). During 1991-1995 the trend in yield has gone faster as compared to that of area and production, while as in the remaining periods the trend pattern has gone down. It has shown a slight increase during 2001-2005. (Fig 2.4). The trend in yield is not keeping pace with that of production. Yield trend has almost shown a decreasing tendency as compared to that of production trend. The trend in production just goes parallel to that of area. The trend in production from 1981-1985 to 1991-1995 is almost in slight increasing order. During these three periods the period 1991-1995 has recorded a production of 327.8 thousand metric tonnes when it was 311.4 thousand metric tonnes in 1981-1985, from 1996-2000 to 2001-2005 there has been an abrupt decreasing trend in production. The production during 1996-2000 had reached to 289.0 thousand metric tonnes. On the other hand it is obvious from the fig 2.4 that trend in area shows fluctuation. The highest area of 296.0 thousand hectares was recorded during 1991-1996, when it was 276.0 thousand hectares in 1981-1985. As compared to that of wheat, the trend in barley has passed through much fluctuation. Wheat has recorded high area under cultivation and accordingly there has been a growth in production and yield observed in the crop as compared to that of barley. In case of barley as is seen from fig 2.4 area and production trend have almost recorded a parallel trend. The trend growth is almost similar in
Fig 2.4
Barley trends in Area, Production and Yield

- Area (000 Hectares)
- Production (000 Met.Tonnes)
- Yield Kg/hect.

<table>
<thead>
<tr>
<th>Period</th>
<th>Area</th>
<th>Production</th>
<th>Yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>1981-1985</td>
<td></td>
<td>200</td>
<td>400</td>
</tr>
<tr>
<td>1986-1990</td>
<td>1000</td>
<td>300</td>
<td>500</td>
</tr>
<tr>
<td>1991-1995</td>
<td>1100</td>
<td>400</td>
<td>600</td>
</tr>
<tr>
<td>1996-2000</td>
<td>1200</td>
<td>500</td>
<td>700</td>
</tr>
<tr>
<td>2001-2005</td>
<td>1300</td>
<td>600</td>
<td>800</td>
</tr>
<tr>
<td>Average</td>
<td>1200</td>
<td>450</td>
<td>650</td>
</tr>
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</table>
2.6 Maize: Trends in Area, Production and Yield

The total average area recorded by the maize was 79.42 thousand hectares. High positive trend in area was recorded during 1991-1995. In this period the area has shown an increase of 4.08 percent than the period 1986-1990. On the other hand among the negative pentad periods high negative trend in area was recorded in 2001-2005 (Table 2.5).

Production has also recorded a same trend. Average production recorded by the crop was 290.3 thousand metric tonnes. High positive trend was recorded in 1991-1995. During this period the total production recorded by the crop was 329.6 thousand metric tons. But as from 1996-2000 to 2001-2005 the production trend was in decreasing order. However, the trend in area and production have followed the same path. Both trend in area and production are almost in decreasing order. The area trend from 1991-1995 to 2001-2005 has shown a decreasing tendency and same is the case with production.

On the other hand the trend in yield has come-down. It has not followed the trend of area and production. From 1991-1995 to 2001-2005 the crop shows continuous decrease. During 1981-1985 yield recorded by the crop was 3612.35 kg per hectare. In 1986-1990 the yield kg per hectare recorded had slightly gone up and reached to 3652.91 kg per hectare while as in 1991-1995 the yield kg per hectare had reached to 3664.31 kg per hectare. However, from 1996-2000 to 2001-2005 the trend in yield kg per hectare has shown decreasing trend. It can be seen from table 2.5, that the trend in maize is same as compared to other crops like cotton, wheat, rice etc. In maize very little area was brought under cultivation and accordingly the production recorded was very low. But the yield kg per hectare had gone very high. High yield 3664.31 kg per hectare was recorded during
Trends in Area, Production

Table 2.5

<table>
<thead>
<tr>
<th>Year</th>
<th>Area (000 Hectares)</th>
<th>Production (000 Met Tonnes)</th>
<th>Yield (Kg/hect)</th>
<th>% Growth of Yield</th>
<th>Rate of Production</th>
<th>Yield</th>
</tr>
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<tr>
<td>1981-1985</td>
<td>70.9</td>
<td>318.2</td>
<td>3612.35</td>
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<td>1.09</td>
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<td>1986-1990</td>
<td>83.2</td>
<td>321.7</td>
<td>3652.91</td>
<td>4.08</td>
<td>2.45</td>
<td>0.31</td>
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<td>1991-1995</td>
<td>86.6</td>
<td>329.6</td>
<td>3654.31</td>
<td>-6.92</td>
<td>-2.74</td>
<td>-0.86</td>
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<tr>
<td>1996-2000</td>
<td>80.6</td>
<td>239.8</td>
<td>3412.64</td>
<td>-5.95</td>
<td>1.00</td>
<td>-0.56</td>
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<tr>
<td>2001-2005</td>
<td>75.8</td>
<td>242.2</td>
<td>3393.21</td>
<td>-5.67</td>
<td>-1.54</td>
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<tr>
<td>Average</td>
<td>79.42</td>
<td>290.3</td>
<td>3547.08</td>
<td></td>
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</tr>
</tbody>
</table>


1991-1995 and low yield of 3393.21 kg per hectare was shown by the period 2001-2005 (Table 2.5)

2.7 Vegetable: Trend in Area, Production and Yield

The total average area recorded by Vegetable during 1981-1985 to 2001-2005 was 45.78 thousand hectares. The period 1986-1990 has shown an increase in area and reached 41.2 thousand hectares over the period 1981-1985. Following pentad periods i.e. 1991-1995 to 1996-2000 has recorded positive trend. The remaining period 2001-2005 has recorded a decreasing trend i.e 50.2 thousand hectares. Out of the positive periods high positive trend in area was shown by the period 1996-2000 in which the area recorded under crop was 52.0 thousand hectares. However low positive trend was recorded during 1981-1985.

The total average production recorded by the crop during 1981-1985 was 427.4 thousand metric tons. High positive trend in production was recorded in 2001-2005 period.

An average yield recorded by the crop was 9440.70 kg per hectare from 1981-1985 to 2000-2005. A high average yield recorded by the crop was 12725 kg per hectare during 2001-2005, while as low yield of 7012.21 kg per hectare was recorded during 1981-1985. After 1981-1985 the crop shows containous growth (Fig 2.6). During 1996-2000 the trend in yield has gone faster as compared to that of area and production, while in the remaining periods the trend pattern has gone down. The production just goes parallel to that of area. The trend in production from 1981-1985 to 1996-2000 is almost in slight increasing
Fig 2.5
Maize trends in Area, Production and Yield

- Area (000 Hectares)
- Production (000 Met. Tons)
- Yield Kg/haet.

Table 2.6

<table>
<thead>
<tr>
<th>Year</th>
<th>Area (000 Hectares)</th>
<th>Production (000 Met Tonnes)</th>
<th>Yield (Kg/hec)</th>
<th>% Growth</th>
<th>Rate of Production</th>
</tr>
</thead>
<tbody>
<tr>
<td>1981-1985</td>
<td>39 9</td>
<td>427 4</td>
<td>7012 21</td>
<td>3.25</td>
<td>1.84</td>
</tr>
<tr>
<td>1986-1990</td>
<td>41 2</td>
<td>435 3</td>
<td>7223 15</td>
<td>10.67</td>
<td>1.26</td>
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<tr>
<td>1991-1995</td>
<td>45 6</td>
<td>440 8</td>
<td>7618 35</td>
<td>14.03</td>
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<tr>
<td>1996-2000</td>
<td>52 0</td>
<td>657 0</td>
<td>12624 71</td>
<td>-3.46</td>
<td>2.31</td>
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<td>2001-2005</td>
<td>50 2</td>
<td>672 2</td>
<td>12725 12</td>
<td>6.12</td>
<td>13.62</td>
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<tr>
<td>Average</td>
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<td>526 54</td>
<td>9440 70</td>
<td>18.74</td>
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</tr>
</tbody>
</table>

Source:
1 Computed on the basis of FAO Production Year Book (1981-2005)
2 Statistical Year Book (1961-2005)

order. During these four periods, the period 1996-2000 has recorded a production of 657 thousand metric tons when it was 427.4 thousand metric tons in 1981-1985. During 1996-2000 there has been an abrupt increasing trend in production, it is because of increasing trend in area and yield in the same year. On the other hand it is obvious from the fig.2.6 that trend in area just goes in upward order from 1981-1985 to 1996-2000. The highest area of 52.0 thousand hectares was recorded during 1996-2000. However, there is a fluctuation in area trend from 1981-1985 to 1991-1995. Again 1991-1995 has shown an increase of 2.85 percent. However, a decreasing trend of 1.44 percent has been recorded in the period 1991-1995. The period 1991-1995 has shown an increase of 2.85 percent. Again 1996-2000 has

2.8 Grapes: Trend in area, production and yield.

The total average area recorded by the grapes during 181-1985 to 2001-2005 was about 94.24 thousand hectares. It is obvious from the table 2.7 that the highest area of 99.3 thousand hectares was recorded in the period 2001-2005 and the lowest area of 89.9 thousand hectares in the period 1981-1985. However, a decreasing trend of 1.44 percent has been recorded in the period 1986-1990. The period 1991-1995 has shown an increase of 2.85 percent. Again 1996-2000 has
Vegetables trends in Area, Production and Yield

Fig 2.6

Trends in Agricultural Productivity in U...
recorded an increase of 3.41 percent in area as compared to that of 1991-1995 while as the last period of 2001-2005 had recorded a decreasing trend in area which is about 2.37 Percent (Table 1.7).

Trend in production is in fluctuating nature. The highest positive trend of 5.34 percent was recorded in the period 1991-1995. While as the lowest positive trend was recorded during the period 1986-1990. A negative trend in production was recorded in the period 2001-2005 i.e -0.63 percent.

The productivity per hectare in all these periods is more or less uniform except, the period 1996-2001. In this period negative trend of 0.6 percent was recorded . A very low yield 4605.9 kg per hectare was shown in the period 1981-1985, while as the highest yield per hectare was recorded in the period 2001-2005. (4725.3 kg per hectare). However, the trend in yield is almost in increasing order, except the period 1996-2000, where the yield has shown a decrease of -0.16 percent over the period 1991-1995. The period 2001-2005 has shown an increase in yield by 0.20 percent over the period 1996-2000 (Table 27, Fig.2.7).

Fig 2.7 reveals that trends in yield kg/hect of grapes is high. Yield growth has not maintained homogeneity with area and production. This is a high positive trend in yield kg/hect of the crop. But their steady growth reveals that productivity has shown an accelerating trend.

### Table 2.7

<table>
<thead>
<tr>
<th>Year</th>
<th>Area (000 Hectares)</th>
<th>Production (000 Met Tonnes)</th>
<th>Yield (Kg/hect)</th>
<th>% Growth of Area</th>
<th>Rate of Growth of Production</th>
<th>Yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>1981-1985</td>
<td>89.9</td>
<td>410.5</td>
<td>4605.9</td>
<td>-</td>
<td>-</td>
<td>1.94</td>
</tr>
<tr>
<td>1986-1990</td>
<td>91.2</td>
<td>423.2</td>
<td>4695.3</td>
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<td>5.34</td>
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<td>1991-1995</td>
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<td>4723.4</td>
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<td>3.23</td>
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</tr>
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<td>1996-2000</td>
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<td>4715.6</td>
<td>3.41</td>
<td>-0.63</td>
<td>0.20</td>
</tr>
<tr>
<td>2001-2005</td>
<td>99.3</td>
<td>457.3</td>
<td>4725.3</td>
<td>2.37</td>
<td>2.75</td>
<td>0.64</td>
</tr>
<tr>
<td>Average</td>
<td>94.24</td>
<td>439.4</td>
<td>4693.1</td>
<td>2.51</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Source:**
Fig 2.7
Grapes trends in Area, Production and Yield

- Area (000 Hectares)
- Production (000 Met.Tons)
- Yield (Kg/hect.)

2.9 Tobacco: Trend in Area, Production and Yield

The total average area recorded by tobacco during 1981-1985 to 2001-2005 was very low (9.5 thousand hectares). Only one period have shown a negative trend in area (1996-2000) while as the remaining periods have almost equal area under cultivation. It is clear from the table 2.8 that the highest area of 9.9 thousand hectares was recorded in the period 2001-2005 and the lowest area of 9.2 thousand hectares in the period 1996-2000.

Production on the other hand has also gone in the same direction. Highest negative trend in production was recorded during 1991-1995 the highest positive trend of 48.62 percent was recorded in the period 1996-2000, while as the lowest positive trend was recorded (0.91 percent) during 1991-1995.

The yield has also gone in the same direction as area and production.

The highest positive trend in yield was recorded during 1996-2000 (47.17 percent), while as the lowest positive trend was recorded during 2001-2005 (0.16 percent). (Table 2.8). It is thus seen from the table 2.8 that tobacco have in significant share to the agricultural production as to other crops of the country.

<table>
<thead>
<tr>
<th>Year</th>
<th>Area (000 Hectares)</th>
<th>Production (000 Met.Tonnes)</th>
<th>Yield (Kg/hec)</th>
<th>% Growth</th>
<th>Rate of Production</th>
</tr>
</thead>
<tbody>
<tr>
<td>1981-1985</td>
<td>9.3</td>
<td>10.3</td>
<td>1102.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1986-1990</td>
<td>9.5</td>
<td>10.9</td>
<td>1118.2</td>
<td>2.15</td>
<td>5.82</td>
</tr>
<tr>
<td>1991-1995</td>
<td>9.8</td>
<td>11.0</td>
<td>1169.6</td>
<td>3.15</td>
<td>0.91</td>
</tr>
<tr>
<td>1996-2000</td>
<td>9.2</td>
<td>16.2</td>
<td>1721.4</td>
<td>-6.12</td>
<td>48.62</td>
</tr>
<tr>
<td>2001-2005</td>
<td>9.9</td>
<td>16.9</td>
<td>1722.5</td>
<td>7.60</td>
<td>4.32</td>
</tr>
<tr>
<td>Average</td>
<td>9.5</td>
<td>13.06</td>
<td>1366.8</td>
<td>1.69</td>
<td>14.91</td>
</tr>
</tbody>
</table>

Trends in Tobacco Production and Yield

Fig 2.8
Tobacco trends in Area, Production and Yield

- Area (000 Hectares)
- Production (000 Met.Tons)
- Yield (Kg/hect.)

References

1. Encyclopedia of Britannica, Volume 13, p. 156.
5. Ibid.
7. Ibid.