

PRODUCTIVITY STATUS OF RICE DURING NINTH PLAN

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PREFACE

A manual **Productivity Status of Rice during 9th Plan** has been prepared by the Directorate of Rice Development, Patna. The objective of this publication is to analyse the productivity of rice in different rice growing eco-systems. The Directorate of Rice Development, Patna has been implementing various development programmes since its inception for increasing the productivity and production of rice in the country. One of the major programme was distribution of seed minikits of latest developed high yielding rice varieties to the cultivators through concerned State Department of Agriculture.

Directorate of Rice Development, Patna has made efforts to analyse the productivity of Rice at state and district levels and attempt has also been made to identify the possible reasons for low productivity in different rice growing zones. Suggestions have also been made to overcome the constraints of low productivity to the possible extent.

It is expected that this publication will be useful to the planners, agricultural scientists/workers, State Departments of Agriculture and other related organisations.

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1. INTRODUCTION

Rice is the most important cereal food crop of India. It occupies about 23.3 per cent of gross cropped area of the country. It plays vital role in the national food grain supply. Rice contributes 43 per cent of total food grain production and 46 per cent of the total cereal production of the country. Rice is the staple food of more than 60 per cent of the world's population specially for most of the people of South-East Asia. Among the rice growing countries in the world, India has the largest area under rice crop and ranks second in production next to China .

The productivity of rice in India is higher than Thailand, Russian Federation and Nepal but much below the productivity of Japan, China, U.S.A. and Indonesia. Average rice productivity in India at the end of Ninth Plan (1997-98 to 2000-02) was 1958 kg/ha, which is about 25 per cent below the world average productivity of 2597 kg/ha during 2000-01.

There is considerable increase in productivity of rice in India during the recent past. The productivity of rice which was 668 kg/ha. in 1950-51 has reached to 2077 kg/ha during 2003-04. Thus, there is increase in productivity of Rice which is more than three fold . This increase is due to introduction of high yielding rice varieties and responsive to high dose of fertilizers coupled with improved package of practices evolved by Agricultural Scientists for various regions. In fact, there is considerable increase in productivity of rice in the country but there are still certain areas, where rice productivity is low and very low. Rice productivity in such areas fluctuates significantly from region to region due to various factors such as soil type, soil fertility, rainfall pattern, flood, water logging, climatic conditions etc. These are various factors, which affect the rice crop resulting in low productivity. Therefore, an attempt has been made in this analysis to determine a particular factor /factors responsible for low productivity of rice in certain area. In this process area, production and yield/productivity data during Ninth Plan(1997-98, 2001-02) has been pooled together to arrive at average of area, production and productivity per ha. In the analysis average data as mentioned above has been used .

In the process of analysis, first the productivity has been classified into various groups. Thus, analysis has been further carried out State-wise and District-wise for all rice growing areas. Reasons for low productivity have also been determined with the possible suggestions to improve the productivity of rice in different rice growing eco-systems of the country.

2. CLASSIFICATION OF

PRODUCTIVITY GROUP

India has the largest area 44.6 million ha. under rice in the world. Rice is cultivated in 537 districts of the country. Out of which, 201 districts are having higher productivity than the national average productivity 1958 kg./ha. Remaining 336 districts having below the national average (Table 1 & 2). Thus 37 per cent of total rice growing districts are having more than 1958 kg./ha. productivity and remaining 63 per cent districts have below the national average productivity. It is evident from the above data that productivity of rice in major growing areas are below 1958 kg./ha. during ninth plan period. It is, therefore, pertinent to make concerted efforts to increase the productivity in these districts having medium-low to very-low productivity in particular and over all productivity in general.

There is wide range of variation in productivity at the district level on account of varied agro-climatic conditions in which rice is grown and also the level of inputs used. Among various inputs like seed, water and fertilizers including organic manures are critical ones and have direct influence on the productivity.

The highest productivity level of 4790 kg/ha was in Dindigul district of Tamil Nadu and the lowest of 350 kg/ha in Jhabua district of Madhya Pradesh.

CLASSIFICATION OF DISTRICTS

According to the productivity levels the districts have been classified into five groups which are given as under :

- (i) High Productivity Districts (yield > 2500 Kg/ha)
- (ii) Medium Productivity Districts (yield 2000-2500 Kg/ha)
- (iii) Medium – Low Productivity Districts (yield 1500-2000 Kg/ha)
- (iv) Low Productivity Districts (yield 1000-1500 Kg/ha)
- (v) Very Low Productivity Districts (yield < 1000 Kg/ha)

HIGH PRODUCTIVITY DISTRICTS

Based on the above criterion, out of 537 rice producing districts, 111 districts had high productivity covering about 12.50 million hectares which constitute 28.0 per cent of the total rice area and producing about 38.30 million tonnes, which was about 44 per cent of total rice production in the country during 9th plan period. The average productivity was 3064 kg per hectare (Table-1). All the districts of Punjab, Goa and Pondicherry, 27 districts of Tamil Nadu, 13 districts of Andhra Pradesh, 11 districts of Karnataka, 9 districts of Haryana, 8 district of Uttar Pradesh, 6 district of West Bengal, 4 districts each of Jammu & Kashmir and Manipur, 2 districts each of Maharashtra and Kerala and 1 district each of Gujarat, Uttranchal & A&N Islands were falling under the category of high productivity districts (Table-2).

MEDIUM PRODUCTIVITY DISTRICTS

There were 80 districts falling under the category of medium productivity districts. The rice area under this category of districts was about 7.74 million hectares (17 per cent of total rice area) and production was about 17.30 million tonnes (about 20 per cent of total production) during 9th Plan. The average productivity was 2235 kg per hectare (Table-1). The largest number of 28 districts of Uttar Pradesh, 7 districts each of West Bengal and Karnataka, 6 districts each of Andhra Pradesh, Bihar and Haryana, 5 districts of Kerala, 4 districts of Maharashtra, 3 districts each of Madhya Pradesh and Tripura, 2 districts of Uttranchal and 1 district each of Himachal Pradesh, Jammu & Kashmir and Rajasthan were falling under the medium productivity group. (Table-2)

MEDIUM-LOW PRODUCTIVITY DISTRICTS

A total number of 100 districts in the country were falling under the medium- low productivity districts. These districts covering rice area of about 7.18 million hectares (about 16 per cent of total rice area) and produced about 12.76 million tonnes (about 15 per cent of total production) during 9th Plan. The average productivity of this category of districts was 1777 kg/ha (Table-1). The largest number of 26 districts of Uttar Pradesh, 10 districts of Assam, 6 districts each of Kerala & Gujarat, 5 districts each of Karnataka, Jammu & Kashmir & Meghalaya, 4 districts each of Bihar, Orissa and Mizoram, 3 districts each of Haryana, Himachal Pradesh, West Bengal and Uttranchal, 2 districts each of Andhra Pradesh and Nagaland, and 1 district each of Arunachal Pradesh, Chhattisgarh, Maharashtra, Madhya Pradesh, Rajasthan, Tamil Nadu, Tripura, A&N Islands and Daman & Diu were falling under medium –low productivity group (Table-2).

LOW PRODUCTIVITY DISTRICTS

Total number of 165 districts in the country having low productivity. The area under these districts was about 12.71 million hectares, which account for about 28.5 per cent of the total rice area in the country and their contribution in the total rice production was about 15.36 million tonnes, which was only about 17.6 per cent of total rice production in the country during 9th Plan. The average productivity of this group in these districts was 1208 kg per hectare (Table-1). The largest number of 25 districts of Bihar, 23 districts of Orissa, 15 districts of Jharkhand, 13 districts of Assam, 12 districts Rajasthan, 9 districts of Maharashtra, 8 districts each of Arunachal Pradesh, Chhattisgarh, 7 districts Uttranchal, 6 districts each of Himachal Pradesh, Madhya Pradesh Uttar Pradesh, 5 districts of Nagaland, 4 districts of Sikkim 3 districts each of Gujarat & Manipur, 2 districts each of Jammu & Kashmir, Karnataka, Meghalaya & West Bengal and 1 district each of Andhra Pradesh, Kerala, Mizoram and Dadara & Nagar Haveli were falling under low productivity group (Table-2).

VERY-LOW PRODUCTIVITY DISTRICTS

A total number of 81 districts in the country were falling under very-low productivity districts. rice area under such category of districts was about 4 million hectares (10.0 per cent of total rice area) and the production was about 3.60 million tonnes (about 4 per cent of total production) during Ninth plan. The average productivity was only

805 kg per hectare (Table-1). The largest number of 31 districts of Madhya Pradesh, 16 districts of Maharashtra, 7 districts of Chhattisgarh, 4 districts each of Arunachal Pradesh, Gujarat and Rajasthan, 3 districts each of Jharkhand and Orissa, 2 districts each of Bihar, Karnataka, Manipur and Uttar Pradesh, and 1 in Delhi were falling under very-low productivity group (Table-2).

Number of districts under different productivity group and percentage share of area and production are depicted in Pie Diagram No.1, 2 & 3 at Page No.61, 62 and 63 respectively.

3. TRENDS OF AREA, PRODUCTION AND PRODUCTIVITY

All India level

The total area under rice in India was 30.81 m. hectares and production was 20.58 m. tonnes during 1950-51. With the increase in population demand of rice have been increased in the country. Thereafter various efforts such as use of High Yielding Varieties of rice responsive to high dose of fertilizers coupled with improved package of practices were made to increase the production & productivity. Production have been increased considerably and we are self sufficient in rice so far. Plan-wise trends in area, production and productivity is indicated at Annexure-I. It has been observed that the area increased from a level of 30.68 m. hectares during 1st five year plan to 44.60 m. hectares during 9th five year plan, which is nearly 45% increase over 1st five year plan. The rice production has registered an appreciable increase from 25.03 m. tonnes during 1st five year plan to 87.32 m. tonnes during 9th five year plan, which is about three & half times over the 1st five year plan. The average productivity was 816 kg./ha. during 1st five year plan, however it has increased to 1958 kg./ha. during 9th five year plan, which is about more than two fold over the 1st plan.

Bar diagram of plan-wise Area, Production and Productivity is depicted at page No.60.

State level:- Rice is grown in all the states and UTs. in the country, West Bengal ranks first in area and production of rice. The major rice growing states are West Bengal, Uttar Pradesh, Andhra Pradesh, Punjab, Tamil Nadu, Orissa, Bihar & Chhattisgarh accounting for about 77% of the total rice production in the country. The other 25 States & UTs. contribute the rest 23% of the total rice production. There is a wide variation in the productivity at State level.

According to the productivity level during 9th plan period (1997-98 to 2001-02) the States can be classified into five groups which is given below:-

Sl. No.	Productivity(kg./ha.)	States
1.	Above > 2500	Andhra Pradesh, Haryana, Goa, Punjab, Tamil Nadu and A & N Islands.
2.	2000-2500	West Bengal, Uttar Pradesh, Uttranchal, Karnataka, Kerala, Manipur, Tripura & Pondicherry.
3.	1500-2000	Bihar, Himachal Pradesh, Jammu & Kashmir, Maharashtra & Meghalaya , Mizoram, Daman & Diu and Dadra&Nagar Haveli..
4.	1000-1500	Arunachal Pradesh, Assam,Gujarat, Jharkhand, Nagaland, Rajasthan, Orissa, and Sikkim.
5.	Below < 1000	Madhya Pradesh and Chhattisgarh

State-wise trends in area, production, productivity and percentage of total area production & productivity in the country during Ninth plan is given at annexure-II.

State-wise trends in area, production and productivity from 6th plan to Ninth Plan is given at annexure-III.

Andhra Pradesh:- The area under paddy was 37.44 lakh hectares during 6th plan and it increased to 39.80 lakh hectares during 9th plan, which is 6% more than 6th plan period. In case of production, it increased from a level of 76.50 lakh tonnes during 6th plan to 109.75 lakh tonnes, which is 43% more than the 6th plan period. The productivity has also been increased (35%) from 2043 kg./ha. during 6th plan to 2758 kg./ha. during 9th plan. There is rising trend in production and productivity in each plan. It is evident from the above analysis that productivity has been increased considerably due to adoption of High yielding varieties and improved package of practices.

Arunachal Pradesh:- There is increase in area from a level of 0.96 lakh hectares during 6th plan to 1.19 lakh hectares, which is 24% more than the 6th plan period. The production has increased 26% from a level of 1.02 lakh tonnes during 6th plan to 1.29 lakh tonnes during 9th plan. As such, there is no significant increase in productivity.

Assam :- During 6th plan the area increased from 22.94 lakh hectares to 25.48 lakh hectares, which is 11% more than the 6th plan period. The production has registered an appreciable increase from 24.59 lakh tonnes during 6th five year plan to 36.70 lakh tonnes during 9th five year plan, which is 49% more than the 6th five year plan. The productivity was 1072 kg./ha. during 6th plan, increased to 1440 kg./ha. during 9th plan, which is 34% more than the 6th plan. There is appreciable increase in area, production & productivity during each plan.

Bihar:-The state has been bifurcated therefore, area has been decreased but there is significant increase in production & productivity during each plan. The productivity was 914 kg./ha. during 6th plan, it has been increased to 1500kg./ha. during 9th plan, which is 64% more than the 6th plan.

Gujarat :- During 6th plan, the area of rice was 5.12 lakh hectares which increased (> 25%) to 6.42 lakh hectares, over the 6th plan period. The production has registered a remarkable

increase from 6.75 lakh tonnes during 6th five year plan to 9.11 lakh. tonnes during 9th five year plan, which is nearly 35% more than the 6th five year plan. The productivity was 1318 kg./ha. during 6th plan and increased to 1419kg./ha. during 9th plan, which is about 7% more than the 6th plan.

Haryana:- There is more than two fold increase in area and production during 6th plan to 9th plan but there is no remarkable increase in productivity, because largest area of rice is under basmati cultivation in the State.

Karnataka:- During 6th plan, the area increased from 11.51 lakh hectares to 14.26 lakh hectares, which is nearly 24% more than the 6th plan period. The production has registered an appreciable increase from 22.68 lakh tonnes during 6th five year plan to 35.34 lakh. tonnes during 9th five year plan. The productivity was 1970 kg./ha. during 6th plan and increased to 2478 kg./ha. during 9th plan, which is about 26% more than the 6th plan.

Kerala:- Area and production have been decreased significantly but productivity have been increased (28%) from 1654 kg./ha. during 6th plan to 2112 kg./ha. during 9th plan period.

Maharashtra:-Area in the state is almost static. The production has registered an appreciable increase from 22.28 lakh tonnes during 6th five year plan to 24.00 lakh tonnes during 9th five year plan, which is 6% more than the 6th five year plan. The productivity was 1477 kg./ha. during 6th plan, it has been increased to 1599 kg./ha. during 9th plan.

Orissa:- The area of 42.13 lakh hectares during 6th plan has been enhanced to 44.96 lakh hectares during 9th plan. The production has registered an appreciable increase from 40.88 lakh. tonnes during 6th five year plan to 57.09 lakh tonnes during 9th five year plan, which is 40% more than the 6th five year plan. The productivity was 970 kg./ha. during 6th plan, it has been increased to 1270kg./ha. during 9th plan, which is 31% more than the 6th plan. There is appreciable increase in area, production & productivity during each plan.

Punjab:- During 6th plan area under paddy was 13.78 lakh hectares and it increased to 25.00 lakh hectares during 9th plan, which is 81% more than 6th plan period. Production has become more than double from 41.43 lakh tonnes during 6th plan to 85.06 lakh tonnes during 9th plan. The productivity has also increased from 3006 kg./ha. during 6th plan to 3402 kg./ha. during 9th plan period.

Tamil Nadu:-Area of rice has been decreased but production has been increased by 58% from 46.19 lakh tonnes during 6th plan to 73.03 lakh tonnes during 9th plan. Similarly, the productivity has also been increased by 67% from 2018 kg./ha. during 6th plan to 3369 kg./ha. during 9th plan period.

Uttar Pradesh:- There is about 8% increase in area from a level of 53.20 lakh hectares during 6th plan to 57.36 lakh hectares. The production has registered an appreciable increase from 62.09 lakh tonnes during 6th five year plan to 118.94 lakh tonnes during 9th five year plan. Thus, there is increase in production during 9th plan which is about 91% more than the 6th five year plan. The productivity was 1167 kg./ha. during 6th plan, it has been increased to 2074 kg./ha. during 9th plan. In the same way there is increase in productivity which is about 78% more than the 6th plan during 9th plan. There is registered increase in area, production & productivity during each plan.

West Bengal :- The area increased from a level of 51.64 lakh hectares to 58.92 lakh hectares, during 6th plan which is 14% more than the 6th plan period. The production has registered significant increase from 68.56 lakh tonnes during 6th five year plan to 136.00 lakh tonnes during 9th five year plan. Thus, there is increase of about 98% during 9th plan which is more than the 6th five year plan. The productivity was 1328 kg./ha. during 6th plan, it has been increased to 2308 kg./ha. during 9th plan, which is 74% more than the 6th plan. Therefore, there is significant increase in area, production & productivity during each plan in the State of West Bengal.

4. DISTRICT-WISE RICE PRODUCTIVITY ANALYSIS IN DIFFERENT STATES

As already mentioned in previous chapter that rice is grown in almost every state and Union Territory with variation in area, production and productivity. There is a wide variation in productivity of rice at district level. . In this chapter analysis of rice productivity in each state has been attempted. A number of rice growing districts of every state have been taken together and then classified as per different productivity groups for productivity analysis at State level. Average area and production during 9th five year plan (1997-98 to 2001-02) have been taken to get average productivity during 9th plan. Average productivity has been taken for productivity analysis at state level.

Andhra Pradesh

Andhra Pradesh is one of the main rice growing State and belongs to high productivity group. It is having productivity of 2758 kg./ha. which is higher than the national average productivity of 1958 kg./ha during 9th plan. Average area of the state is 39.80 lakh hectares, which is 8.9% of the total area of the country and average production is 109.75 lakh tonnes which is 12.6% of the total production. Out of 22 districts, productivity of 19 districts having higher than the national average productivity and 3 districts namely Srikakulam, Vizianagram & Visakhapatnam having productivity below the national average. There are 13 districts which belong to high productivity group i.e. yield more than 2500 kg./ha., 6 districts under medium productivity group (yield in the range of 2000 to 2500 kg./ha.), 2 districts under medium low productivity group (yield in the range of 1500 to 2000 kg./ha) and one district under low productivity group (yield in the range of 1000 to 1500 kg./ha.). About 76% of area is concentrated in high productivity group which accounts for 82% of total production of the state. Remaining 24% is having medium productivity to low productivity group which accounts for 18% of the total production of the state. West Godavari district is having the highest productivity of 3297 kg./ha. and Visakhapatnam having the lowest productivity of 1373 kg./ha. in the state.

District-wise average area, production and productivity of rice under different groups during 9th five year plan are given in Annexure –IV, Table-1.

Arunachal Pradesh

Rice is grown in 13 districts in the state. Average productivity of the state is 1082 kg./ha. and it belongs to low productivity group. Productivity of all 13 districts are below the national average productivity of 1958 kg./ha. Out of 13 districts, 1 district falls under medium low productivity group (yield in the range of 1500 to 2000 kg./ha), 8 districts under low productivity group (yield in the range of 1000 to 1500 kg./ha) and 4 districts under very low

productivity group (yield below 1000 kg./ha.). About 91% of rice area is concentrated in low to very low productivity group. East Siang district is having the highest productivity of 1561 kg./ha. and Tirap having the lowest productivity of 679kg./ha. in the state.

District-wise average area, production and productivity of rice under different groups during 9th five year plan are given in Annexure –IV, Table-2.

Assam

Rice is a main crop of Assam. There are three crop seasons i.e. autumn, winter and summer and as such grown through out the year. Average productivity of the state is 1440 kg./ha. and it belongs to low productivity group. Productivity of all 23 districts are below the national average productivity of 1958 kg./ha.. Average area of the state was 25.48 lakh hectares during 9th plan which was 5.71% of the total area of the country. Average production was 36.70 lakh tonnes which was 4.2% of the total production of the country.

Out of 23 districts, 10 districts fall under medium low productivity group (yield in the range of 1500 to 2000 kg./ha)and 13 districts under low productivity group (yield in the range of 1000 to 1500 kg./ha.) About 37% of rice area is concentrated in medium- low productivity group which contributes 45% of the total production of the state. Remaining 63% of rice area is concentrated in low productivity group which contributes 55% of the total production of the state. Cachar district is having the highest productivity of 1930 kg./ha. and Bongaigaon having the lowest productivity of 1010 kg./ha. in the state.

District-wise average area, production and productivity of rice under different groups during 9th five year plan are given in Annexure –IV, Table-3.

Bihar

Rice is a main crop of Bihar and grown in three crop seasons i.e. autumn, winter and summer. It is one of the main rice growing States and belongs to Medium low productivity group. It is having productivity of 1500 kg./ha., which is lower than the national average productivity of 1958 kg./ha during 9th plan. Out of 37 districts, productivity of 6 districts having higher than the national average productivity of the country and productivity of 31 districts having below the national average. Average area of the state was 35.93 lakh hectares during 9th plan which was 8.06% of the total area of the country. Average production was 53.91 lakh tonnes which was 6.17% of the total production of the country.

Out of 37 districts, 6 districts fall under medium productivity group (yield in the range of 2000 to 2500 kg./ha.), 4 districts under medium low productivity group (yield in the range of 1500 to 2000 kg./ha) and 25 districts under low productivity group (yield in the range of 1000 to 1500 kg./ha.) and 2 districts fall under very low productivity group (yield below 1000 kg./ha.). Buxar district is having the highest productivity of 2436 kg./ha. and Khagaria having the lowest productivity of 663 kg./ha. in the state.

District-wise average area, production and productivity of rice under different groups during 9th five year plan are given in Annexure –IV, Table-4

Chhattisgarh

It is one of the important rice growing States and belongs to very low productivity group. It is having productivity of 982 kg./ha., which is lower than the national average productivity of 1958 kg./ha during 9th plan. Average area of the state is 37.90 lakh hectares, which is 8.5% of the total area of the country. Average production is 37.22 lakh tonnes, which is 4.26% of the total production of the country.

Out of 16 districts, 1 district falls under medium low productivity group (yield in the range of 1500 to 2200 kg./ha), 8 districts under low productivity group (yield in the range of 1000 to 1500 kg./ha.) and 7 districts under very low productivity group (yield below 1000 kg./ha.). Dhamtari district is having the highest productivity of 1568 kg./ha. and Mahasumand having the lowest productivity of 781 kg./ha. in the state.

District-wise average area, production and productivity of rice under different groups during 9th five year plan are given in Annexure –IV, Table-5

Goa

Rice cultivation in Goa is confined in two districts on small area of 0.55 lakh ha and production 1.55 lakh tonnes. Average productivity is 2818 kg./ha., which is above the national average productivity. Productivity of both districts are higher than the national average productivity in the country.

District-wise average area, production and productivity of rice under different groups during 9th five year plan are given in Annexure –IV, Table-6.

Gujarat

Gujarat state belongs to low productivity group. It is having productivity of 1419 kg./ha, which is lower than the national average productivity of 1958 kg./ha . Out of 14 districts, 2 districts have higher than the national average productivity and 12 districts are below the national average productivity . Average area of the state was 6.42 lakh hectares during 9th plan, which was 1.4% of the total area of the country. Average production was 9.11 lakh tonnes, which was 1.04% of the total production of the country.

Out of 14 districts, 1 district falls under high productivity group i.e. yield is more than 2500 kg./ha., 6 districts under medium low productivity group (yield in the range of 1500 to 2000 kg./ha.), 3 districts under low productivity group (yield in the range of 1000 to 1500 kg./ha)and 4 districts falls under very low productivity group (yield in the range of below 1000 kg./ha). Gandhinagar district is having the highest productivity of 2625 kg./ha. and Baroda having the lowest productivity of 741 kg./ha. in the state

District-wise average area, production and productivity of rice under different groups during 9th five year plan are given in Annexure –IV, Table-7

Haryana

Haryana state belongs to High productivity group. It is having productivity of 2516 kg./ha., which is higher than the national average productivity of 1958 kg./ha during 9th plan. Average area of the state is 10.32 lakh hectares, which is 2.3% of the total area of the country. Average production is 25.97 lakh tonnes, which is 3% of the total production. Out

of 18 districts, productivity of 15 districts are higher than the national average productivity and 3 districts namely Sonapat, Jhajjar and Rohtak are having productivity below the national average productivity.

Out of 18 districts, 9 districts fall under high productivity group i.e. yield more than 2500 kg./ha., 6 districts under medium productivity group (yield in the range of 2000 to 2500 kg./ha.) and 3 districts under medium low productivity group (yield in the range of 1500 to 2000 kg./ha.). Kurukshetra district is having the highest productivity of 3014 kg./ha. and Rohtak having the lowest productivity of 1479 kg./ha. in the state.

District-wise average area, production and productivity of rice under different groups during 9th five year plan are given in Annexure –IV, Table-8.

Himachal Pradesh

Rice is grown in 10 districts of the state. Average productivity of the state is 1508 kg./ha. and it belongs to medium low productivity group. Productivity of 1 district is above the national average productivity of 1958 kg./ha and 9 districts are below the national average productivity. One district out of 10 districts falls under medium productivity group (yield in the range of 2000 to 2500 kg./ha), 3 districts under medium low productivity group (yield in the range of 1500 to 2000 kg./ha.) and 6 districts under low productivity group (yield range of 1000 to 1500 kg./ha.). Una district having the highest productivity of 2207kg./ha. and Shimla having the lowest productivity of 1143 kg./ha., respectively.

District-wise average area, production and productivity of rice under different groups during 9th five year plan are given in Annexure –IV, Table-9.

Jammu & Kashmir

Rice is grown in 10 districts of the state. Average productivity of the state is 1833 kg./ha. and it belongs to medium low productivity group. Productivity of 5 districts are above the national average productivity of 1958 kg./ha and 7 districts are below the national average productivity. 4 districts out of 12 districts fall under high productivity group i.e. yield more than 2500 kg./ha., 1 district under medium productivity group (yield of 2000 to 2500 kg./ha.), 5 districts under medium low productivity group (yield in the range of 1500 to 2000 kg./ha.) and 2 districts under low productivity group (yield range of 1000 to 1500 kg./ha.). Anantanag and Doda are having the highest productivity of 2912 kg./ha. and the lowest productivity of 1077kg./ha. in the state respectively.

District-wise average area, production and productivity of rice under different groups during 9th five year plan are given in Annexure-IV, Table-10.

Jharkhand

Rice is grown in 18 districts in the state. Average productivity of the state is 1116kg./ha. and it belongs to low productivity group. Productivity of all 18 districts are below the national average productivity . Average area of the state is 14.89 lakh hectares, which is 3.3% of the total area of the country. Average production is 16.62 lakh tonnes, which is 1.9% of the total production.

Productivity of 15 districts out of 18 districts fall under low productivity group (yield range of 1000 to 1500 kg./ha) and 3 districts under very low productivity group (yield below 1000 kg./ha.). Chatra and Lohardaga are having the highest productivity of 1483kg./ha. and lowest productivity of 896 kg./ha. in the state respectively.

District-wise average area, production and productivity of rice under different groups during 9th five year plan are given in Annexure-IV, Table-11.

Karnataka

Karnataka state belongs to medium productivity group. It is having productivity of 2478 kg./ha., which is higher than the national average productivity of 1958 kg./ha during 9th plan. Average area of the state is 14.26 lakh hectares, which is 3.2% of the total area of the country. Average production is 35.34 lakh tonnes, which is 4.05% of the total production. Productivity of 20 districts out of 27 districts are higher than the national average productivity and 7 districts are having productivity below national average productivity.

Productivity of 11 districts out of 27 districts fall under high productivity group (yield more than 2500 kg./ha.), 7 districts under medium productivity group (yield in the range of 2000 to 2500 kg./ha.), 5 districts under medium low productivity group (yield in the range of 1500 to 2000 kg./ha) and 2 districts under low productivity group (yield in the range of 1000 to 1500 kg./ha.) and 2 districts under very low productivity group (yield in the range of below 1000 kg./ha.) Koppal and Bidar are having the highest productivity of 3393 kg./ha. and the lowest productivity of 608 kg./ha. of the state respectively.

District-wise average area, production and productivity of rice under different groups during 9th five year plan are given in Annexure-IV, Table-12.

Kerala

Kerala state belongs to medium productivity group and it is having productivity of 2112 kg./ha., which is higher than the national average productivity of 1958 kg./ha during 9th plan. Average area of the state is 3.52 lakh hectares, which is 0.8% of the total area of the country. Average production is 7.43 lakh tonnes, which is 0.9% of the total production. Productivity of 8 districts out of 14 districts are higher than the national average productivity and 6 districts are having productivity below national average productivity .

Productivity of 2 districts out of 14 districts fall under high productivity group (yield more than 2500 kg./ha.), 5 districts under medium productivity group (yield in the range of 2000 to 2500 kg./ha.), 6 districts under medium low productivity group (yield in the range of 1500 to 2000 kg./ha) and 1 district under low productivity group (yield in the range of below 1000 kg./ha.). Pathanamthitta and Kozhikode are having the highest productivity of 2594kg./ha. and the lowest productivity of 1279 kg./ha., respectively.

District-wise average area, production and productivity of rice under different groups during 9th five year plan are given in Annexure-IV, Table-13.

Madhya Pradesh

Madhya Pradesh state belongs to very low productivity group. It is having productivity of 893 kg./ha., which is lower than the national average productivity of 1958 kg./ha. The productivity of 3 districts out of 41 districts are higher than the national average productivity and 38 districts are having productivity below the national average productivity of the country. Average area of the state was 16.93 lakh hectares during 9th plan which was 3.8% of the total area of the country. Average production was 14.72 lakh tonnes, which was 1.7% of the total production of the country.

Productivity of 3 districts out of 41 districts, fall under medium productivity group (yield in the range of 2000 to 2500 kg./ha.), 1 district under medium low productivity group, 6 districts under low productivity group (yield in the range of 1000 to 1500 kg./ha.) and 31 districts under very low productivity group (yield in the range of below 1000 kg./ha.). Gwalior and Jhabua are having the highest productivity of 2223 kg./ha. and the lowest productivity of 350 kg./ha. of the state respectively. The productivity of Jhabua district is not only the lowest in the state but also in our country.

District-wise average area, production and productivity of rice under different groups during 9th five year plan are given in Annexure-IV, Table-14.

Maharashtra

Maharashtra state belongs to Medium low productivity group, it is having productivity of 1599 kg./ha., which is lower than the national average productivity of 1958 kg./ha. Out of 32 districts, productivity of 6 districts have higher than the national average productivity and 26 districts having productivity below the national average productivity. Average area of the state was 15.01 lakh hectares during 9th plan, which was 3.37% of the total area of the country. Average production was 24.00 lakh tonnes, which was 2.75% of the total production of the country.

Productivity of 2 districts, out of 32 districts fall under high productivity group (yield more than 2500 kg./ha.), 4 districts under medium productivity group (yield in the range of 2000 to 2500 kg./ha.), 1 district, under medium low productivity and 9 districts under low productivity group (yield in the range of 1000 to 1500 kg./ha.) and 16 districts under very low productivity group (yield in the range of below 1000 kg./ha).. Sangli and Osmanabad are having the highest productivity of 2547 kg./ha. and the lowest productivity of 351 kg./ha. in the state respectively.

District-wise average area, production and productivity of rice under different groups during 9th five year plan are given in Annexure - IV, Table-15.

Manipur

Manipur state belongs to medium productivity group having productivity 2331 kg./ha., which is higher than the national average productivity of 1958 kg./ha during 9th plan. Average area of the state is 1.60 lakh hectare and average production is 3.74 lakh tonnes . Out of 9 districts, productivity of 4 districts are higher than the national average productivity and 5 districts having productivity below than national average.

Out of 9 districts, 4 districts fall under high productivity group (yield more than 2500 kg./ha.), 3 districts under low productivity group (yield in the range of 1000 to 1500 kg./ha.)

and 2 districts under very low productivity group (yield in the range of below 1000 kg./ha.). East Imphal district having the highest productivity of 3101kg./ha. and Churchandpur having the lowest productivity of 946 kg./ha. in the state.

District-wise average area, production and productivity of rice under different groups during 9th five year plan are given in Annexure-IV, Table-16

Meghalaya

Meghalaya state belongs to medium low productivity group having productivity 1580 kg./ha., which is below the national average productivity of 1958 kg./ha of the country during 9th plan. Average area of the state is 1.06 lakh. hectare and average production is 1.68 lakh tonnes . Out of 7 districts, productivity of 2 districts are higher than the national average productivity and 5 districts having productivity below than national average productivity.

Out of 7 districts, 5 districts fall under medium low productivity group (yield in the range of 1500 to 2000 kg./ha) and 2 districts under medium low productivity group (yield in the range of 1000 to 1500 kg./ha). Ribhoi district is having the highest productivity of 2000 kg./ha. and South Garo hillshaving the lowest productivity of 1110kg./ha. in the state.

District-wise average area, production and productivity of rice under different groups during 9th five year plan are given in Annexure-IV, Table-17

Mizoram

Mizoram state belongs to medium low productivity group having productivity 1760 kg./ha. which is below than the national average productivity of 1958 kg./ha during 9th plan. Average area of the state is 0.59 lakh. hectare and average production is 1.03 lakh tonnes . Out of 5 districts, productivity of 1 district is higher than the national average productivity and 4 districts having productivity below national average.

Out of 5 districts 4 district fall under medium low productivity group (yield in the range of 1500 to 2000 kg./ha) and 1 district under medium low productivity group (yield in the range of 1000 to 1500 kg./ha.). East Aizawal district is having the highest productivity of 1960 kg./ha. and Chintuipui having the lowest productivity of 1357kg./ha. of the state.

District-wise average area, production and productivity of rice under different groups during 9th five year plan are given in Annexure-IV, Table –18.

Nagaland

Nagaland state belongs to low productivity group having productivity of 1338 kg./ha., which is below than the national average productivity of 1958 kg./ha during 9th plan. Average area of the state is 1.49 lakh. hectare and average production is 1.99 lakh tonnes . productivity of all the 7 districts are below national average productivity.

Out of 7 districts, 2 districts fall under medium low productivity group (yield in the range of 1500 to 2000 kg./ha) and 5 districts under low productivity group (yield in the range of 1000 to 1500 kg./ha.). Phek is having the highest productivity of 1538 kg./ha. and Zunhebato having the lowest productivity of 1338kg./ha. in the state.

District-wise average area, production and productivity of rice under different groups during 9th five year plan are given in Annexure-IV, Table -19.

Orissa

Rice is a main crop of Orissa and grown in three crop seasons i.e. autumn, winter and summer in a year. It is one of the main rice growing States and belongs to low productivity group having productivity of 1270 kg./ha., which is lower than the national average productivity of 1958 kg./ha during 9th plan. Productivity of all the districts are below than national average productivity. Average area of the state is 44.96 lakh hectares which is 10.1% of the total area of the country and average production is 57.09 lakh tonnes, which is 6.5% of the total production of the country.

Out of 30 districts, 4 districts fall under medium low productivity group (yield in the range of 1500 to 2200 kg./ha) and 23 district under low productivity group (yield in the range of 1000 to 1500 kg./ha.) and 3 districts falls under very low productivity group (yield in the range of below 1000 kg./ha.). Baragarh district is having the highest productivity of 1747 kg./ha. and Sundargarh having the lowest productivity of 870 kg./ha. in the state.

District-wise average area, production and productivity of rice under different groups during 9th five year plan are given in Annexure-IV, Table - 20

Punjab

Punjab is one of the main rice growing State which belongs to High productivity group having productivity of 3402 kg./ha. which is higher than the national average productivity of 1958 kg./ha during 9th plan. Average area of the state is 25.00 lakh hectares, which is 5.6% of the total area of the country and average production is 85.06 lakh tonnes accounts for 9.7% of the total production . Productivity of all the districts are higher than the national average productivity.

All the 17 districts fall under high productivity group (yield more than 2500 kg./ha.) Fatehgarsahib district is having the highest productivity of 3760 kg./ha. and Gurudaspur having the lowest productivity of 2813 kg./ha. in the state.

District-wise average area, production and productivity of rice under different groups during 9th five year plan are given in Annexure-IV, Table - 21

Rajasthan

Rajasthan state belongs to low productivity group having productivity of 1168 kg./ha. which is below the national average productivity of 1958 kg./ha during 9th plan. Average area of the state is 1.68 lakh hectare and average production is 1.97 lakh tonnes . Out of 18 districts, productivity of only one district is higher than the national average productivity and 17 districts having productivity below national average.

Out of 18 districts, 1 district falls under medium productivity group (yield in the range of 2000 to 2500 kg./ha.), 1 district under medium low productivity group (yield in

the range of 1500 to 2000 kg./ha), 12 districts under low productivity group (yield in the range of 1000 to 1500 kg./ha.) and 4 districts under very low productivity group (yield in the range of below 1000 kg./ha.). Hanumangarh district is having the highest productivity of 2348 kg./ha. and Dungarpur having the lowest productivity of 552./ha. in the state.

District-wise average area, production and productivity of rice under different groups during 9th five year plan are given in Annexure-IV, Table - 22.

Sikkim

Sikkim state belongs to low productivity group having productivity of 1375 kg./ha., which is below the national average productivity of 1958 kg./ha during 9th plan. Average area of the state is 0.16 lakh. hectare and average production is 0.22 lakh tonnes. Productivity of all the districts of the state is below national average productivity.

All the 4 districts fall under low productivity group (yield in the range of 1000 to 1500 kg./ha.). East Sikkim district is having the highest productivity of 1484 kg./ha. and North Sikkim having the lowest productivity of 1357 kg./ha. of the state.

Tamil Nadu

Tamil Nadu state is one of the main rice growing state and belongs to high productivity group having productivity 3369 kg./ha. which is higher than the national average productivity of 1958 kg./ha. during 9th plan. Average area of the state is 21.68 lakh. hectares which is 4.86% of the total area of the country and average production is 73.03 lakh tonnes which is 8.36% of the total production . Out of 28 districts, productivity of 27 districts are higher than the national average and 1 district namely Ramnathpuram having productivity below national average.

Out of 28 districts 27 districts, fall under high productivity group (yield more than 2500 kg./ha.) and 1 districts under medium low productivity group (yield in the range of 1500 to 2000 kg./ha.) About 94% of area is concentrated in high productivity group which accounts for 97% of total production of the State

District-wise average area, production and productivity of rice under different groups during 9th five year plan are given in Annexure-IV, Table - 23

Tripura

Tripura state belongs to medium productivity group having productivity 2135 kg./ha., which is higher than the national average productivity of 1958 kg./ha during 9th plan. Average area of the state is 2.47 lakh. hectare and average production is 5.27 lakh tonnes . Out of 4 districts, productivity of 3 districts are higher than the national average productivity and 1 district having productivity below national average.

Out of 4 districts, 3 districts fall under medium productivity group (yield in the range of 2000 to 2500 kg./ha.) and 1 district under medium low productivity group (yield in the range of 1500 to 2000 kg./ha.). West Tripura district is having the highest productivity of 2251 kg./ha. and Dhalia having the lowest productivity of 1773./ha. in the state.

District-wise average area, production and productivity of rice under different groups during 9th five year plan are given in Annexure-IV, Table - 24.

Uttar Pradesh

Uttar Pradesh state is one of the important rice growing State and belongs to medium productivity group having productivity of 2074 kg./ha., which is higher than the national average productivity of 1958 kg./ha during 9th plan. Average area of the state is 57.36 lakh hectares which is 12.86% of the total area of the country and average production is 118.94 lakh tonnes which is 13.62% of the total production. Out of 70 districts productivity of 38 districts are higher than the national average productivity and 32 districts having productivity below national average.

Out of 70 districts, 8 districts fall under high productivity group (yield more than 2500 kg./ha.), 28 districts under medium productivity group (yield in the range of 2000 to 2500 kg./ha.), 26 districts under medium low productivity group (yield in the range of 1500 to 2000 kg./ha), 6 districts under low productivity group (yield in the range of 1000 to 1500 kg./ha.) and 2 districts under very low productivity group (yield in the range of below 1000 kg./ha) . About 11% of area is concentrated in high productivity group which accounts for 14% of total production of the State. Bijnor district is having the highest productivity of 2850 kg./ha. and Lalitpur having the lowest productivity of 778 kg./ha. in the state.

District-wise average area, production and productivity of rice under different groups during 9th five year plan are given in Annexure-IV, Table - 25.

Uttranchal

Uttranchal state belongs to medium productivity group having productivity of 2012 kg./ha., which is higher than the national average productivity of 1958 kg./ha during 9th plan. Average area of the state is 3.07 lakh hectares and average production is 6.71 lakh tonnes. Out of 13 districts productivity of 4 districts are higher than the national average and 9 districts having productivity below national average.

Out of 13 districts, 1 district falls under high productivity group (yield more than 2500 kg./ha.), 2 districts under medium productivity group (yield in the range of 2000 to 2500 kg./ha.), 3 districts under medium low productivity group (yield in the range of 1500 to 2000 kg./ha), and 7 districts under low productivity group (yield in the range of 1000 to 1500 kg./ha.). U.S Nagar is having the highest productivity of 2969kg./ha. and Almora having the lowest productivity of 1066 kg./ha. in the state.

District-wise average area, production and productivity of rice under different groups during 9th five year plan are given in Annexure-IV, Table – 26.

West Bengal

West Bengal ranks first in area and production of rice in the country. Rice is a main crop and grown in three crop seasons i.e. autumn, winter and summer in a year. It belongs to medium productivity group having productivity 2308 kg./ha. which is higher than the national average productivity of 1958 kg./ha during 9th plan. Out of 22 districts, productivity of 13 districts are higher than the national average productivity and productivity of 9 districts

are below national average. Average area of the state is 58.95 lakh hectares which is 13.2% of the total area of the country. Average production is 136.00 lakh tonnes, which is 15.6% of the total production of the country.

Out of 22 districts, 6 districts fall under high productivity group (yield more than 2500 kg./ha), 7 districts under medium productivity group (yield in the range of 2000 to 2500 kg./ha.), 3 districts under medium low productivity group (yield in the range of 1500 to 2000 kg./ha) and 2 districts under low productivity group (yield in the range of 1000 to 1500 kg./ha.). About 40% of area is concentrated in high productivity group which accounts for 47% of total production of the State. Burdwan district is having the highest productivity of 2881kg./ha. and Darjeeling having the lowest productivity of 1366 kg./ha. in the state.

District-wise average area, production and productivity of rice under different groups during 9th five year plan are given in Annexure-IV, Table - 27

5. REASONS FOR LOW PRODUCTIVITY

Rice is cultivated in India under widely varying condition of altitude and climate. It is grown in almost all types of soils including alkaline and acidic soils. In fact, rice plant has got wide physical adaptability. Therefore, it is grown from below sea level (Kuttanad area of Kerala), up to an elevation of 2000 meters in Jammu & Kashmir, hills of Uttranchal, Himachal Pradesh and North-Eastern hills (NEH areas). Hence, rice growing seasons vary in different parts of the country, depending upon temperature, rainfall, soil types, water availability and other climatic conditions. The productivity of rice varies very much from one region to another region, from one season to another season etc. due to various reasons such as imbalance use of fertilizers, soil moisture stress, incidence of insect pests and diseases etc. The reasons are discussed below :

- (1) The complex ecological situation of rainfed eco-system consisting of upland, shallow low land, semi-deep water and deep water conditions is one of prime reasons for low productivity. In fact, about 60 per cent of the total rice area in the country is concentrated in rainfed eco-system and it is contributing about 45 per cent to the national production of rice, but rainfed eco-system is handicapped with varied natural, socio-economic, organisational and technological constraints resulting in low productivity.
- (2) Out of 45 million ha of total rice in India, upland rice occupies about 7 million ha, of which 6 million ha are concentrated in Eastern India comprising of Chhattisgarh, Eastern U. P., Bihar, Orissa, West Bengal and Assam and these states together

constitute about 13.5 per cent (upland) of total area under rice in the country. It is often found that upland rainfed crop suffered due to soil moisture stress at critical crop growth stage including drought, lack of resistant/ tolerance to diseases and pests, in adequate plant population and low nutrients status of soils are responsible for low productivity of rice in upland areas.

- (3) Transfer/adoption of improved production technology in harsh rainfed eco-system has not picked up its desired momentum. Therefore, productivity of rice in these eco-system is considerably poor.
- (4) High yielding varieties are fertilizer responsive / oriented. Yet, the farmers are using much less fertilizer per unit cropped area than their counterparts in South and South-East Asian Countries. There is wide disparity in fertilizer use within the country . The States like Tamil Nadu and Punjab use as high as 100-150 kg. as against 20 kg/ha in Assam, Orissa and Madhya Pradesh. In Eastern Region, rice area is about 59 per cent but fertilizer consumption is low, resulting in poor productivity.
- (5) A number of high yielding varieties have been released for general cultivation but out of this more than 90 per cent varieties are for irrigated eco-system and some improved varieties are available for rainfed eco-system, which constitutes more than 60 per cent of cultivated rice areas in the country .
- (6) Rice area is more in Eastern states and these states are facing drought situation frequently and irrigation facilities is not sufficient to offset hazards exist by vagaries of monsoon . Besides, cultivation is fully depend on monsoon with poor management package of practice. Therefore, productivity of rice is considerably low in these states.
- (7) About 15 per cent area of the total area of rice in the country is subjected to flooding particularly in Eastern Uttar Pradesh, Bihar, West Bengal, Orissa, Assam, Tripura and Manipur during south–west monsoon period. Intensity of floods differ from year to year due to variation in factors such as nature and frequency of flooding, water depth, turbidity, silt and vegetation from place to place. Such factors make the productivity of deep rice low.
- (8) The cultivation of rice under upland conditions is subjected to different degrees of moisture stress, which affects plant growth , tillering capacity less leaf area, higher sterility, delayed flowering and lower harvest index (grain-straw ratio). These factors or combination of these contribute lower grain yield in upland rice areas.
- (9) Upland rice fields are always infested with high degree of weed population which compete for water, nutrients and light than low land and fields. Therefore, the productivity of upland rice is affected considerably.
- (10) In Eastern states rice is grown mostly during Kharif season and it often suffers due to high rainfall. Besides, rice crop gets inundated during early part of the crop growth stage, low light intensity due to clouds for a longer duration resulting in higher sterility and pests and diseases. Therefore, productivity of rice is considerably low.

- (11) Due to non-availability of seeds of location specific high yielding varieties, the farmers are forced to use local traditional varieties continuously due to lack of awareness about high yielding varieties.
- (12) Poor crop plant population in case of broadcast sowing method resulting in uneven germination (upland and direct seeded lowland). Delay in monsoon onset often results in delayed and prolonged transplanting and sub-optimum plant population (mostly in rainfed low lands). Therefore, the productivity is low.
- (13) Non-availability of bullock drawn/power drawn transplanter for timely transplanting of rice crop.
- (14) In the high rainfed regions, the rain water is lost rapidly through deep percolation, because of the upland location and loose texture of the soil. In these soils the plant nutrient applied through fertilizers are lost rapidly and investment of fertilizer become risky. Further, low water retention capacity by the soil due to high permeability brings in moisture stress conditions quickly after cessation of rains. Such situation contributes low productivity.
- (15) In the low rainfall regions , the crops suffer from iron and zinc deficiency in some soils. In the high rainfall regions diseases break out particularly Helminthosporium possibly due to imbalance nutrients availability in the soils.

7. SUGGESTIONS FOR IMPROVING RICE PRODUCTIVITY

India has the largest area of rice in the world. Rice is cultivated in 537 districts of the country. Out of which, 201 districts are having productivity more than national average productivity of 1958 kg/ha. Remaining 336 districts are having productivity below the national average. Thus, 37 per cent of total rice growing districts are above the national average productivity and remaining 63 per cent districts are below the national average productivity. It is evident from the above data that major rice growing areas are below the national average productivity. It is, therefore, pertinent to make concerted scientific efforts to increase the productivity in those districts having low and very low productivity in particular and over all productivity in general. In this chapter the following suggestions are made to increase the rice productivity in different rice growing eco-systems.

1. Adequate number of improved / high yielding varieties may be evolved for rainfed eco-system, which constitute nearly 60 per cent of the cultivated rice area.
2. Rice area in Eastern region is 59% of total area but productivity is very poor. Hence, suitable technology and varieties may be developed for this region so that productivity could be increased.
3. Major research thrusts should be for ecologically handicapped rainfed areas to increase productivity. In fact, adoption/transfer of improved production technology seems to be on slow pace in rainfed areas, therefore, a special programme is needed to be launched in such areas to motivate the farmers to adopt improved technology.
4. In rainfed eco-system, farmers are using much less fertilizers per unit cropped area, hence a awareness is required to be created among the farming community about balance use of fertilizers to increase their productivity.
5. Improved technology is generally adopted for irrigated rice. Even in the predominantly irrigated parts of the country, full potential of high yielding varieties is not realised. There is bright prospects for tapping considerable portion of untapped remaining potential.
6. The productivity of rainfed eco-system comprising of up lands, shallow lowlands, semi deep water and deep water areas can be improved in two ways –
 - (i) To improve the environment so as to exploit the presently available technology and
 - (ii) To manage the production package to suit the environment. The first option seems to be a very long range strategy is the best because it builds up agriculture by taking care of need based irrigation – drainage network all over the lowlands and efficient rainwater management systems for the uplands. Therefore, a programme may be initiated to improve the long neglected environment in phased manner, where abundance of water, fertile soil and

conducive weather are available for rice cultivation. For effective management of production package to suit the environment, it is needed to make wide

exposure/publicity of high yielding varieties suitable for rainfed uplands, shallow low lands and semi-deep water situations along with improved package of practices to the farmers through demonstration etc. It is also absolutely necessary to develop adequate infrastructure for production and distribution of good quality seeds on large scale.

7. All eastern states are having good ground water potential and they are utilizing hardly 5 to 35 per cent of their potential. If infrastructure facilities are created for exploration/exploitation of their ground water potential for irrigation and its efficient utilization, this will help to increase the production and productivity of rice in eastern states.
8. Root development has been well recognized as an important factor for upland/dry condition crops. Therefore, deeper roots are desirable for upland rices because soil moisture increases with depth of the soil profile and a variety with deep roots can reach and use soil moisture at a greater depth resulting in high productivity.
9. Upland rice needs fertilization more than low land rice . In fact, nitrogen and phosphorus both play an important roles in its growth and development. Phosphorus is more vital in upland rice culture than in lowland rice, because applied phosphorus in upland rice is less easily available under aerobic and acidic condition and partly because of high phosphorus fixation in upland soils. Therefore, utmost care should be taken while using fertilizer in upland rice fields. Recommended dose and timely application of fertilizers always results in higher productivity .
10. The line sowing in upland rice areas through suitable seeding devices is required to be made popularized for desired plant population. This will facilitate to control weeds and also to carry out interculture operations.
11. Due to drought and erratic rainfall, rice cultivation in uplands is always found risky and uncertain. Varietal improvement still remains the major strategy for increasing productivity in upland areas. Therefore, scientists are required to take up this matter seriously so that the low productivity of up land rice can be improved to a greater extent.
12. A proper research programme is required to be carried out for improving physiological efficiency of the plant for better photosynthesis efficiency and translocation so as to reduce sterility under low light intensity, thereby increasing productivity.
13. Promotion of hybrid rice is required to be popularised among the farmers in suitable areas so that production and productivity can be increased.
14. More number of cold tolerant high yielding varieties are required to be developed and popularised for different altitudes of hill regions.

15. Leguminous crops may be included in the cropping system in order to improve the soil fertility.
16. Saline, alkaline and acidic soils may be reclaimed by application of soil ameliorants.
17. Use of Bio-fertilizers such as Blue Green Algae, Azospirillum, Azotobacter and Azolla may be encouraged among the farmers for supply of nitrogenous nutrient and their by reducing the cost of chemical nitrogenous fertilizers.
18. To encourage the Integrated Nutrient Management (INM) and Integrated Pest Management (IPM) approach for effective control of pests and diseases by emphasizing the need based application of pesticides.
19. Strong extension network Integrated Pest Management (IPM), Integrated Nutrient Management (INM) for effective transfer of latest technologies, improvement of credit and market facilities and crop insurance are required for rainfed lowland ecology.
20. There is need to promote 'System of Rice Intensification' (SRI) technology for increasing rice productivity in the country. In the state of Andhra Pradesh the productivity has been increased by 45% and the productivity of rice has also been increased by 1000 kg./ha. with saving of 50 % saving of irrigation water in the state of Tamil Nadu.
21. Existing development activities are appeared to be inadequate for dissemination of advance / improved production technology among the farmers to increase productivity of rice in different rice growing regions of the country. Therefore developmental activities are required to be strengthened suitably achieving sustainable growth in rice productivity and production.

Table-1

Average area , production and productivity alongwith number of districts under different productivity groups during Ninth plan (1997-98 to 2001-02)

Sl. No.	Category of Districts	No. of Distts	Area (m.ha.)	Per cent of all India rice area	Production (m. tonnes)	Percent of all India Prod.	Productivity (kg/ha)
1.	High Productivity Distts. (>2500 kg/ha)	111	12.50	28.0	38.30	43.9	3064
2.	Medium Productivity Distts.(2000-2500 Kg/ha)	80	7.74	17.4	17.30	19.8	2235
3.	Medium-Low Productivity Distts.(1500-2000kg/ha)	100	7.18	16.1	12.76	14.6	1777
4.	Low Productivity Distts.(1000-1500 kg/ha)	165	12.71	28.5	15.36	17.6	1208
5.	Very low Productivity Distts(<1000 kg/ha)	81	4.47	10.0	3.60	4.1	805
	All India	537	44.60		87.32		1958

Table- 2

State-wise number of High, Medium, Medium-low, Low and Very low productivity districts based on the productivity groups & productivity below the national average during Ninth plan (1997-98 to 2001-02)

(Number of Districts)

State/Uts	Total rice growing districts	High prod. Distts. (>2500 Kg./ha.)	Medium Prod. Distts (2000-2500) Kg./ha.	Medium-low Prod. Distts. (1500-2000) Kg./ha.)	Low Prod. Distts. (1000-1500) Kg./ha.	Very low Productivity Districts (<1000 kg/ha.)	Productivity below the national average i.e.1959 kg/ha
1.Andhra Pradesh	22	13	6	2	1	-	3
2. Arunachal Pradesh	13	-	-	1	8	4	13
3. Assam	23	-	-	10	13	-	23
4. Bihar	37	-	6	4	25	2	31
5.Chhattisgarh	16	-	-	1	8	7	16
6.Goa	2	2	-	-	-	-	-
7.Gujarat	14	1	-	6	3	4	12
8.Haryana	18	9	6	3	-	-	3
9. Himachal Pradesh	10	-	1	3	6	-	9
10..Jammu&Kashmir	12	4	1	5	2	-	7
11.Jharkhand	18	-	-	-	15	3	18
12.Karnataka	27	11	7	5	2	2	7
13.Kerala	14	2	5	6	1	-	6
14. Madhya Pradesh	41	-	3	1	6	31	38
15 Maharashtra	32	2	4	1	9	16	26
16. Manipur	9	4	-	-	3	2	5
17. Meghalaya	7	-	-	5	2	-	6
18. Mizoram	5	-	-	4	1	-	4
19 Nagaland	7	-	-	2	5	-	7
20. Orissa	30	-	-	4	23	3	30
21. Punjab	17	17	-	-	-	-	-
22. Rajasthan	18	-	1	1	12	4	17
23. Sikkim	4	-	-	-	4	-	4
24. Tamilnadu	28	27	-	1	-	-	1
25 Tripura	4	-	3	1	-	-	1
26Uttar Pradesh	70	8	28	26	6	2	32
27.Uttaranchal	13	1	2	3	7	-	9
28. West Bengal	18	6	7	3	2	-	5
29. A&N Islands	2	1	-	1	-	-	1
30.D&N Haveli	1	-	-	-	1	-	1
31.Delhi	1	-	-	-	-	1	1
32Daman&.Diu	1	-	-	1	-	-	-
33. Pondicherry	3	3	-	-	-	-	-
Total	537	111	80	100	165	81	336

Annexure - I

Plan-Wise Area ,Production and Productivity of Rice in India

Five Year Plan	Area M.ha	% increase over previo Plan year	Productio M.tonnes	%increase over previ Plan year	Producti Kg /ha.	%increase over previous Plan year
First Plan (1951 -52 to 1955-56)	30.68	-	25.03	-	816	-
Second Plan (1956 -57 to 1960 -61)	33.14	8	30.34	21.2	915	12.1
Third Plan (1961 -62 to 1965 -66)	35.62	7.5	35.15	15.9	987	7.9
Annual Plan (1966 -67)	35.25	-	30.44	-	863	-
(1967 -68)	36.44	-	37.61	-	1032	-
(1968 -69)	36.97	-	39.76	-	1076	-
Fourth Plan (1969 -70 to 1973-74)	37.60	5.6	41.8	18.9	1112	12.7
Fifth Plan (1974 -75 to 1978 -79)	39.33	4.6	47.34	13.3	1204	8.3
Annual Plan (1979 -80)	39.42	-	42.33	-	1074	-
Sixth Plan (1980 -81 to 1984 -85)	40.30	2.5	54.49	15.1	1352	12.3
Seventh Plan (1985 -86 to 1989-90)	41.00	1.7	65.06	19.4	1587	17.4
Annual Plan (1990 -91)	42.69	-	74.29	-	1740	-
(1991 -92)	42.65	-	74.68	-	1751	-
Eighth Plan (1992 -93 to 1996 -97)	42.68	4.1	78.74	21.0	1845	16.3
Ninth Plan (1997 -98 to 2001-02)	44.60	4.5	87.32	10.9	1958	6.1

Annexure-II

**State-wise trends in area, production and productivity of rice during Ninth Plan
(1997-98 to 2001-02) and % share of Area & Production of the Country**

A - Area in lakh Ha.

P - Production in lakh tonnes

Y - Yield in kg/ha.

State	area	%of area	Rank	production	% of prod.	Rank
Andhra Pradesh	39.80	8.92	IV	109.75	12.57	III
Arunachal Pradesh	1.19	0.27		1.29	0.15	
Assam	25.48	5.71	VII	36.70	4.20	
Bihar	35.93	8.06	VI	53.91	6.17	VII
Chhattisgarh	37.90	8.50	V	37.22	4.26	VIII
Goa	0.55	0.12		1.55	0.18	
Gujarat	6.42	1.44		9.11	1.04	
Haryana	10.32	2.31		25.97	2.97	
Himachal Pradesh	0.82	0.18		1.24	0.14	
Jammu & Kashmir	2.58	0.58		4.73	0.54	
Jharkhand	14.89	3.33		16.62	1.90	
Karnataka	14.26	3.20		35.34	4.05	X
Kerala	3.52	0.79		7.43	0.85	
Madhya Pradesh	16.75	3.76		14.95	1.71	
Maharashtra	15.01	3.37		24.00	2.75	
Manipur	1.60	0.36		3.74	0.43	
Meghalaya	1.06	0.24		1.68	0.19	
Mizoram	0.59	0.13		1.03	0.12	
Nagaland	1.49	0.33		1.99	0.23	
Orissa	44.96	10.08	III	57.09	6.54	VI
Punjab	25.00	5.60	VIII	85.06	9.74	IV
Rajasthan	1.68	0.38		1.97	0.23	
Tamil Nadu	21.68	4.86	IX	73.03	8.36	V
Tripura	2.47	0.55		5.27	0.60	
Uttar Pradesh	57.36	12.86	II	118.94	13.62	II
Uttranchal	3.07	0.69		6.17	0.71	
West Bengal	58.92	13.21	I	136.00	15.57	I
Others	0.75	0.17		1.44	0.16	
Total	446.05			873.22		

State-wise trends in area, production and productivity of rice during sixth

A - Area in lakh Ha.

P - Production in lakh tonnes

Y - Yield in kg/ha.

STATES/Uts		Before starting of 6th plan 1979-80	6th plan 1980-81 1984-85	7th plan 1985-86 1989-90	Annual plan	
					1990-91	1991-92
Andhra Pradesh	A	34.69	37.44	37.09	40.36	39.36
	P	63.07	76.5	83.74	96.54	92.49
	Y	1818	2043	2258	2392	2350
Arunachal Pradesh	A	0.57	0.96	1.09	1.22	1.22
	P	0.78	1.02	1.33	1.43	1.43
	Y	1376	1058	1220	1170	1173
Assam	A	21.30	22.94	23.64	24.90	25.28
	P	18.81	24.59	26.36	32.70	31.97
	Y	883	1072	1115	1313	1265
Bihar	A	55.51	50.98	52.80	53.90	51.00
	P	56.35	46.60	58.87	63.64	47.53
	Y	1015	914	1115	1218	932
Chhattisgarh	A					
	P					
	Y					
Goa	A	0.54	0.53	0.51	0.54	0.54
	P	0.95	1.22	1.15	1.34	1.37
	Y	1781	2297	2260	2508	2536
Gujarat	A	4.58	5.12	4.97	5.31	5.98
	P	4.37	6.75	5.73	7.91	6.91
	Y	954	1318	1152	1491	1155
Haryana	A	5.09	5.11	5.79	6.61	6.40
	P	9.42	12.88	14.77	18.34	18.12
	Y	1851	2521	2552	2775	2831
Himachal Pradesh	A	0.92	0.96	0.90	0.85	0.83
	P	0.8	1.05	0.98	1.07	1.03
	Y	874	1089	1087	1254	1236
Jammu & Kashmir	A	2.68	2.71	2.67	2.66	2.82
	P	4.83	5.67	5.45	5.55	5.5
	Y	1804	2091	2043	2086	1949

STATES/Uts		Before startir	6th plan	7th plan	Annual plan	
		of 6th plan 1979-80	1980-81 1984-85	1985-86 1989-90	1990-91	1991-92
Jharkhand	A P Y					
Karnataka	A	11.74	11.51	11.46	11.73	12.69
	P	23.7	22.68	22.07	24.15	28.26
	Y	2019	1970	1926	2059	2227
kerala	A	7.93	7.72	6.20	5.59	5.41
	P	12.93	12.76	10.85	1087	10.6
	Y	1630	1654	1750	1942	1959
Madhya Pradesh	A	47.7	48.95	49.95	51.18	51.32
	P	18.25	39.79	46.04	57.38	52.49
	Y	383	813	922	1121	1023
Maharastra	A	14.85	15.09	15.00	15.81	15.72
	P	18.29	22.28	21.23	23.14	21.00
	Y	1231	1477	1416	1463	1336
Manipur	A	1.55	1.69	1.65	1.57	1.60
	P	2.28	2.67	2.74	2.74	3.41
	Y	1466	1578	1658	1742	2124
Meghalaya	A	0.99	1.07	1.08	1.04	1.05
	P	1.22	1.27	1.13	1.20	1.21
	Y	1233	1191	1044	1155	1159
Mizoram	A	0.63	0.37	0.51	0.51	0.56
	P	0.2	0.34	0.50	0.64	0.71
	Y	309	908	989	1244	1277
Nagaland	A	0.98	1.11	1.23	1.27	1.29
	P	0.51	0.99	1.09	1.52	1.54
	Y	520	888	886	1195	1194
Orissa	A	41.17	42.13	43.05	44.04	45.48
	P	29.18	40.88	50.23	52.75	66.6
	Y	709	970	1167	1198	1464
Punjab	A	11.67	13.78	17.86	20.24	20.74
	P	30.41	41.43	57.07	63.35	67.55
	Y	2606	3006	3195	3229	3257

STATES/Uts		Before startir of 6th plan 1979-80	6th plan 1980-81 1984-85	7th plan 1985-86 1989-90	Annual plan	
					1990-91	1991-92
Rajasthan	A	1.86	1.52	1.25	1.20	1.40
	P	1.00	1.61	1.27	1.42	1.20
	Y	540	1061	1013	1182	852
Sikkim	A		0.15	0.17	0.19	0.18
	P		0.13	0.19	0.25	0.22
	Y		880	1118	1360	1260
Tamil Nadu	A	29.06	22.89	20.16	18.56	21.18
	P	58.00	46.19	55.92	57.82	65.96
	Y	1996	2018	2774	3116	3115
Tripura	A	2.55	2.86	2.67	2.74	2.57
	P	3.01	3.82	4.20	5.01	4.75
	Y	1183	1336	1573	1830	1846
Uttar Pradesh	A	50.52	53.20	53.43	56.17	54.13
	P	25.53	62.09	82.13	102.6	94.11
	Y	505	1167	1537	1827	1739
Uttranchal	A					
	P					
	Y					
West Bengal	A	49.05	51.64	54.33	58.13	57.19
	P	58.87	68.56	94.41	104.37	119.54
	Y	1200	1328	1738	1795	2090
A & N Islands	A	0.11	0.12	0.13	0.12	0.12
	P	0.10	0.22	0.25	0.31	0.31
	Y	873	1855	1960	2508	2583
D & N Haveli Admn.	A	0.10	0.11	0.12	0.13	0.13
	P	0.19	0.18	0.2	0.18	0.24
	Y	1920	1667	1729	1472	1813
Daman & Diu Admn.	A			0.02	0.02	0.03
	P			0.02	0.03	0.05
	Y			1367	1706	1667
Pondicherry	A	0.31	0.31	0.25	0.25	0.25
	P	0.74	0.67	0.58	0.59	0.63
	Y	2428	2161	2263	2361	2500
Delhi Admn.	A					
	P					
	Y					

All India	A	394.14	403.05	410.03	426.87	426.49
	P	423.30	544.85	650.61	742.91	746.78
	Y	1074	1352	1587	1470	1751

Table. 1. Average area, production and productivity of Rice under productivity groups during Ninth five year plan

District	No of districts	Area (000 ha)	% of State rice area	Prod.(000 tonnes)	% of State rice prod.	Productivity
West Godabari		448.6		1479.0		3297
Guntur		315.4		1018.6		3230
Karimnagar		235.6		736.2		3125
Krishna		386.6		1197.2		3097
Praksham		140.6		423.4		3011
East Godabari		398.4		1187.0		2979
Nellore		211.0		627.4		2973
Kurnool		90.8		259.0		2852
Nalgonda		250.2		682.2		2727
Warangal		174.8		461.6		2641
Anantpur		62.0		160.8		2594
Khammam		163.2		414.8		2542
Nizamabad		154.2		390.0		2529
	13	3031.4	76.2	9037.2	82.3	2981
Cuddapah		68.4		167.0		2442
Chittoor		87.8		210.2		2394
Rangareddy		51.6		122.6		2376
Medak		108.2		254.4		2351
Adilabad		69.2		151.2		2185
Mahabubnagar		135.2		291.2		2154
	6	520.4	13.1	1196.6	10.9	2299
Srikakullam		192.6		357.4		1856
Vizianagram		128.6		237.2		1844
	2	321.2	8.1	594.6	5.4	1851
Visakhapatnam		106.6		146.4		1373
	1	106.6	2.6	146.4	1.3	1373
	Nil					
	22	3979.6		10974.8		2758

Table. 2. Average area, production and productivity of Rice under productivity groups during Ninth five year plan

State-Arunachal Pradesh						
District	No of districts	Area (000 ha)	% of State rice area	Production (000 tonnes)	% of State rice prod.	Productivity
	NIL					
	NIL					
East Siang		10.7		16.7		1561
	1	10.7	9.0	16.7	12.9	1561
Lahit		12.6		17.7		1405
Changlang		11.7		14.9		1274
Dibang valley		10.4		13.2		1269
Tawang		0.9		1.1		1222
East Kameng		8.6		10.1		1174
Papumpare		7.2		7.6		1056
West Siang		19.2		19.9		1036
West Kameng		0.9		0.9		1000
	8	71.5	60.4	85.4	66.1	1194
Upper Siang		5.9		4.6		780
L/Subansiri		20.7		16		773
U/Subansiri		4.2		2.9		690
Tirap		5.3		3.6		679
	4	36.1	30.5	27.1	21.0	751
	13	118.3		129.2		1092
Percentage is based on Districts total						

Table 3. Average area, production and productivity of Rice under productivity groups during Ninth five year plan

District	No of districts	Area (000 ha)	% of State rice area	Production (000 tonnes)	% of State rice prod.	Productivity
	Nil					
	Nil					
Cachar		103.2		199.2		1930
Golaghat		84.7		160.1		1890
Karimganj		72.6		134.6		1854
Sibsagar		98.4		174.6		1774
Marigaon		103.6		178.3		1721
Nagaon		239.5		410.8		1715
Jorhat		96.5		163.5		1694
Hailakandi		44.4		74.8		1685
N.C.Hills		13.6		22.5		1654
Dibrugarh		86.2		141.7		1644
	10	942.7	36.8	1660.1	45.2	1761
Goalpara		70.7		104.6		1479
Tinsukua		65.7		96.9		1475
Kamrup		174.3		252.1		1446
K.Anglong		119.5		172.4		1443
Sonitpur		153.4		207.7		1354
Dhemaji		65.9		83.5		1267
Dhubri		137.5		172.6		1255
Darang		180.8		215.9		1194
Nalbari		150.0		168.1		1121
Barpeta		191.8		209.9		1094
Kokrajhar		94.8		102.6		1082
Lakhimpur		116.3		124.9		1074
Bongaigaon		98.0		99.0		1010
	13	1618.7	63.2	2010.2	54.8	1242
	Nil					
	23	2561.6		3670.3		1433

Percentage is based on Districts total

Table. 4. Average area, production and productivity of Rice under productivity groups during Ninth five year plan

District	No of districts	Area (000 ha)	% of State rice area	Production (000 tonnes)	% of State rice prod.	Productivity
	Nil					
Buxar		85.6		208.5		2436
Rohatas		216.0		523.2		2422
Bhabhua		106.1		235.3		2218
Bhojpur		108.0		234.9		2175
Patna		106.1		227.6		2145
Aurangabad		157.3		319.6		2032
	6	779.1	21.5	1749.1	31.8	2245
W.Champaran		184.4		337.2		1829
jahanabad		86.3		146.9		1702
Gaya		140.9		231.2		1641
Nawada		83.4		126.5		1517
	4	495.0	13.6	841.8	15.3	1701

Contd/

District	No of districts	Area (000 ha)	% of State rice area	Production (000 tonnes)	% of State rice prod.	Productivity
Munger		29.6		43.4		1466
Katihar		124.6		177.7		1426
Gopalganj		95.7		136.1		1422
Nalanda		112.0		158.6		1416
Banka		108.6		153.7		1415
E.Champaran		188.4		255.5		1356
Shekhpura		24.5		33.2		1355
Saran		90.9		121.0		1331
Madhepuro		87.8		116.9		1331
Siwan		102.8		135.6		1319
Sheohar		23.6		30.9		1309
Bhagalpur		49.5		63.8		1289
Purnea		118.9		152.8		1285
Vaishali		58.8		75.5		1284
Lakhisarai		31.4		38.8		1236
Saharsha		95.4		111.0		1164
Araria		122.3		141.8		1159
Muzafarpur		129.7		148.0		1141
Kishanganj		98.5		112.2		1139
Supal		112.5		126.6		1125
Sitamarhi		104.5		117.4		1123
Madhubani		177.1		191.7		1082
Smastipur		86.7		94.2		1087
Begusarai		23.0		24.1		1048
Jamui		39.4		40.6		1030
Total	25	2236.2	61.6	2801.1	51.0	1253
Darbhanga		95.4		87.9		921
Khagaria		25.8		17.1		663
Total	2	121.2	3.3	105.0	1.9	866
	37	3631.5		5497.0		1514

Table. 5. Average area, production and productivity of Rice under productivity groups during Ninth five year plan

District	No of districts	Area (000 ha)	% of State rice area	Production (000 tonnes)	% of State rice prod.	Productivity
	NIL					
	NIL					
Dhamtari		138.6		217.3		1568
	1	138.6	3.6	217.3	5.4	1568
Jangir		256.6		332.3		1295
Rajnandgaon		252.7		323.7		1281
Bilaspur		318.5		396.1		1244
Kanker		154.8		188.4		1217
Jagdalpur		268.9		306.0		1138
Korba		110.6		125.1		1131
Sarguja		318.2		359.1		1129
Dantebara		224.9		241.9		1076
	8	1905.2	49.9	2272.6	57.1	1193
Koriya		73.5		71.9		978
Jashpur		179.3		172.7		963
Raipur		504.1		425.2		843
Durg		419.1		346.9		828
Rayagarh		269.4		220.2		817
Kabardha		89.6		71.0		792
Mahasamund		236.1		184.4		781
	7	1771.1	46.4	1492.3	37.5	843
	16	3814.9		3982.2		1044

Percentage is based on Districts total

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productivity groups during Ninth five year plan

District	No of districts	Area (000 ha)	% of State rice area	Production (000 tonnes)	% of State rice prod.	Productivity
South Goa		22.2		57.3		2581
North Goa		32.8		84.2		2567
	2	55		141.4		2571
	Nil					
	Nil					
	Nil					
	Nil					
	2	55.0	100.0	141.4	100.0	2571

Table. 7. Average area, production and productivity of Rice under productivity groups during Ninth five year plan

District	No of districts	Area (000 ha)	% of State rice area	Production (000 tonnes)	% of State rice prod.	Productivity
Gandhinagar		7.2		18.9		2625
	1	7.2	1.1	18.9	2.0	2625
	Nil					
Surendranagar		0.2		0.4		2000
Surat		81.8		157.1		1921
Kheda		156.9		275.4		1755
Godhra		105.9		178.5		1686
Sabarkantha		25.9		43.6		1683
Mehsana		11.9		19.5		1639
	6	382.6	58.1	674.5	70.6	1763
Ahmedabad		74.5		92.2		1238
Bhabanagar		0.1		0.1		1000
Amreli		0.1		0.1		1000
	3	74.7	11.4	92.4	9.7	1237
Dangs		12.1		11.8		975
Broach		25.1		23.3		928
Valsad		102.7		94.6		921
Baroda		53.6		39.7		741
	4	193.5	29.4	169.4	17.7	875
	14	658.0		955.2		1452

Percentage is based on Districts total

Table. 8. Average area, production and productivity of Rice under productivity groups during Ninth five year plan

District	No of districts	Area (000 ha)	% of State rice area	Production (000 tonnes)	% of State rice prod.	Productivity
Kurukhetra		111.8		337.0		3014
Fathabad		62.0		186.0		3000
Sirsa		39.0		114.4		2933
Ambala		71.2		205.4		2885
Panchkula		6.0		17.0		2833
Y.Nagar		54.0		152.8		2830
Karnal		161.0		432.0		2683
Faridabad		28.0		71.0		2536
Gurgaon		8.6		21.6		2512
	9	541.6	52.5	1537.2	59.3	2838
Bhiwani		6.4		16.0		2500
Rewari		0.8		2.0		2500
Kaithal		160.0		388.0		2425
Panipat		71.4		162.2		2272
Hissar		32.8		74.0		2256
Jind		104.8		220.6		2105
	6	376.2	36.5	862.8	33.2	2293
Sonepat		75.0		137.6		1835
Jhajjar		15.0		22.2		1480
Rohtak		23.4		34.6		1479
	3	113.4	11.0	194.4	7.5	1714
	NIL					
	NIL					
	18	1031.2		2594.4		2516

Table. 9. Average area, production and productivity of Rice under productivity groups during Ninth five year plan

District	No of districts	Area (000 ha)	% of State rice area	Production (000 tonnes)	% of State rice prod.	Productivity
	Nil					
Una		2.9		6.4		2207
	1	2.9	3.5	6.4	5.2	2207
Solan		3.6		6.8		1889
Sirmour		5.5		9.1		1655
Mandi		20.6		31.0		1505
	3	29.7	36.1	46.9	37.8	1579
Bilaspur		2.0		2.9		1450
Kangra		37.6		54.5		1449
Chamba		2.8		4.0		1429
Hamirpur		2.6		3.7		1423
Kullu		1.9		2.5		1316
Shimla		2.8		3.2		1143
	6	49.7	60.4	70.8	57.0	1425
	NIL					
	10	82.3		124.1		1508

Table. 10. Average area, production and productivity of Rice under productivity groups during Ninth five year plan

District	No of districts	Area (000 ha)	% of State rice area	Production (000 tonnes)	% of State rice prod.	Productivity
Anantanag		39.9		116.2		2912
Srinagar		12.2		35.0		2869
Pulwama		25.6		64.2		2508
Budgam		27.0		67.6		2504
Total	4	104.7	40.3	283.0	50.3	2703
Baramula		30.4		63.3		2082
Total	1	30.4	11.7	63.3	11.3	2082
Jammu		52.9		97.9		1851
Kathua		35.2		63.7		1810
Rajouri		6.2		10.9		1758
Poonch		3.6		6.3		1750
Kupwara		13.1		20.2		1542
Total	5	111.0	42.7	199.0	35.4	1793
Udhampur		9.8		12.8		1306
Doda		3.9		4.2		1077
Total	2	13.7	5.3	17.0	3.0	1240
	NIL					
Total	12	259.8		562.3		2164

Percentage is based on Districts total

Table. 11. Average area, production and productivity of Rice under productivity groups during Ninth five year plan

District	No of districts	Area (000 ha)	% of State rice area	Production (000 tonnes)	% of State rice prod.	Productivity
	NIL					
	NIL					
	NIL					
Chatra		29.2		43.3		1483
Hazaribagh		84.1		118.8		1413
Deoghar		70.5		93.3		1323
Dumka		124.2		156.3		1258
Koderma		11.4		14.3		1254
Godda		64.2		80.5		1254
Garhwa		29.9		35.7		1194
Singhbhum(E)		115.6		137.1		1186
Giridh		82.4		97.5		1183
Singhbhum(w)		253.5		297.8		1175
Pakur		62.3		71.5		1148
Dhanbad		48.7		53.2		1092
Palamau		52.3		55.6		1063
Sahebganj		50.1		52.8		1054
Ranchi		228.6		239.4		1047
	15	1307.0	82.8	1547.1	85.5	1184
Gumla		186.2		185.3		995
Bokaro		35.5		32.2		907
Lohardaga		49.0		43.9		896
	3	270.7	17.2	261.4	14.5	966
	18	1577.7		1808.5		1146

Percentage is based on Districts total

Table. 12. Average area, production and productivity of Rice under productivity groups during Ninth five year plan

District	No of districts	Area (000 ha)	% of State rice area	Production (000 tonnes)	% of State rice prod.	Productivity
Koppal		72.5		246.0		3393
Davangere		115.4		384.8		3334
Bellary		79.0		252.6		3197
Chamarajnagar		17.9		54.6		3050
Mysore		111.0		335.4		3022
Mandya		77.4		234.0		3023
Raichur		132.1		374.1		2832
Tumkur		45.6		124.8		2737
Bangalore(rural)		17.7		47.6		2689
Bangalore(urban)		6.3		16.6		2634
Hassan		65.4		166.6		2547
	11	740.3	51.5	2237.1	63.3	2790
Kolar		21.4		53.1		2481
Chitradurga		12.6		31.0		2460
Gadag		1.1		2.7		2455
Chikmagalur		50.3		120.9		2404
Kodagu		38.1		90.4		2373
Bijapur		0.4		0.9		2250
Shimoga		156.2		331.6		2123
	7	280.1	19.5	630.6	17.9	2251
Bagalkot		0.2		0.4		2000
Dakshin Kanada		64.7		129.1		1995
Udupi		68.1		123.5		1814
Uttara Kanada		88.9		148.3		1668
Gulbarga		25.0		39.5		1580
	5	246.9	17.2	440.8	12.5	1785
Haveri		56.2		84.3		1500
Belgum		63.5		94.8		1493
	2	119.7	8.3	179.1	5.1	1496
Dharwad		39.2		37.5		957
Bidar		10.2		6.2		608
	2	49.4	3.4	43.7	1.2	885
	27	1436.4		3531.3		2459

Percentage is based on Districts total

Table. 13. Average area, production and productivity of Rice under productivity groups during Ninth five year plan

District	No of districts	Area (000 ha)	% of State rice area	Production (000 tonnes)	% of State rice prod.	Productivity
Pathanamthitta		6.9		17.9		2594
Alappuzha		35.1		88.6		2524
	2	42.0	12.0	106.5	14.4	2536
Kottayam		15.0		36.2		2413
Wayanad		15.7		36.8		2344
Idduki		3.9		9.0		2308
Palakkad		114.3		254.4		2226
Trissur		40.6		84.9		2091
	5	189.5	54.1	421.3	56.8	2232
Kollam		16.2		32.0		1975
Thiruvanthapuram		8.6		16.8		1953
Kasargode		8.2		16.0		1951
Mallapuram		24.5		44.5		1816
Ernakulam		41.9		73.5		1754
Kannur		12.8		21.6		1688
	6	112.2	32.0	204.4	27.6	1822
Kozhikode		6.8		8.7		1279
	1	6.8	1.9	8.7	1.2	1279
	NIL					
	14	350.5		740.9		2114

Percentage is based on Districts total

Table. 14. Average area, production and productivity of Rice under productivity groups during Ninth five year plan

District	No of districts	Area (000 ha)	% of State rice area	Production (000 tonnes)	% of State rice prod.	Productivity
	NIL					
Gwalior		38.5		85.6		2223
Morena		2.1		4.5		2143
Sheopur		6.4		13.7		2141
	3	47.0	2.7	103.8	7.2	2209
Bhind		13.6		24.0		1765
	1	13.6	0.8	24.0	1.6	1765
Hosangabad		9.2		11.7		1272
Harda		1.8		2.2		1222
Balaghat		247.2		298.9		1209
Datia		2.1		2.4		1143
Shivpuri		5.9		6.3		1068
Narsinghpur		10.6		11.5		1085
	6	276.8	16.1	333.0	23.0	1203

District	No of districts	Area	% of State rice area	Production (000 tonnes)	% of State rice prod.	Productivity
Seoni		110.7		101.1		913
Guna		1.7		1.5		882
Betul		40.9		36.0		880
Jabalpur		56.5		48.9		865
Khandwa		21.0		17.8		848
Sahadol		211.1		176.8		838
Tikmagarh		23.6		18.3		775
Dindori		73.6		56.0		761
Chhatarpur		17.8		13.1		736
Katni		111.4		81.0		727
Sehore		1.7		1.2		706
Raisen		5.7		3.9		684
Rewa		134.1		90.8		677
Shajapur		0.6		0.4		667
Satna		107.8		71.4		662
Mandla		104.8		66.6		635
Sidhi		120.5		75.9		630
Damoh		53.7		33.7		628
Dewas		0.8		0.5		625
Sagar		8.9		5.3		596
Ratlam		3.1		1.8		581
Bhopal		0.7		0.4		571
Vidisha		0.7		0.4		571
Chhindwara		25.6		14.6		570
Panna		61.9		34.5		557
Umariya		40.6		20.7		510
Rajgarh		1.4		0.7		500
Barwani		2.8		1.2		429
Dhar		2.9		1.2		414
Khargone		6.3		2.3		365
Jhabua		24.3		8.5		350
	31	1377.2	80.3	986.5	68.2	716
	41	1714.6		1447.3		844

Percentage is based on Districts total

Table. 15. Average area, production and productivity of Rice under productivity groups during Ninth five year plan

District	No of districts	Area (000 ha)	% of State rice area	Production (000 tonnes)	% of State rice prod.	Productivity
Sangli		17.2		43.8		2547
Sindhudurga		79.6		199.9		2511
	2	96.8	6.4	243.7	10.2	2518
Kolhapur		105.8		264.5		2500
Raigad		134.2		331.9		2473
Ratnagiri		79.2		194.8		2460
Thane		143.4		289.5		2019
	4	462.6	30.8	1080.7	45.0	2336
Satara		43.1		72.8		1689
	1	43.1	2.9	72.8	3.0	1689
Bhandra		141.8		187.8		1324
Pune		61.0		78.2		1282
Chandrapur		143.1		182.9		1278
Nasik		46.1		54.0		1171
Gondia		184.9		214.8		1162
Solapur		2.4		2.7		1125
Nagpur		35.3		39.7		1125
Gadchiroli		142.3		158.3		1112
Ahmednagar		5.9		6.0		1017
	9	762.8	50.8	924.4	38.5	1212
Jalgaon		1.7		1.6		941
Aurangabad		0.8		0.7		875
Dhule		4.9		4.0		816
Yavatmal		5.4		4.3		796
Nanded		25.5		18.2		714
Amravati		9.3		6.3		677
Washim /Akola		2.2		1.4		636
Buldhana		0.5		0.3		600
Jalna		1.2		0.7		583
Hingoli		14.2		7.8		549
Nandurbar		20.8		11.2		538
Latur		20.4		10.7		525
Wardha		0.6		0.3		500
Beed		3.4		1.6		471
Purbhani		9.4		4.3		457
Osmanabad		15.4		5.4		351
	16	135.7	9.1	78.8	3.2	581
	32	1501.0	99.7	2400.4		1599

Table. 16. Average area, production and productivity of Rice under productivity groups during Ninth five year plan

District	No of districts	Area (000 ha)	% of State rice area	Production (000 tonnes)	% of State rice prod.	Productivity
Imphal(East)		30.7		95.2		3101
Imphal(West)		32.3		99.1		3068
Thoubal		21.0		65.7		3129
Bishnupur		25.9		67.8		2618
	4	109.9	57.3	327.8	79.9	2983
	NIL					
	NIL					
Senapati		12.5		14.7		1176
Chandel		11.0		11.2		1018
Ukhrul		9.0		9.0		1000
	3	32.5	17.0	34.9	8.5	1074
Tamenglong		23.6		23.1		979
Churchandapur		25.7		24.3		946
	2	49.3	25.7	47.4	11.6	961
	9	191.7		410.1		2139
		160.3		373.6		2331

Percentage is based on Districts total

Table. 17. Average area, production and productivity of Rice under productivity groups during Ninth five year plan

District	No of districts	Area (000 ha)	% of State rice area	Production (000 tonnes)	% of State rice prod.	Productivity
	NIL					
	NIL					
Ribhoi		11.8		23.6		2000
Khasi Hills(East)		5.4		9.3		1722
Jaintia Hills		16.8		26.3		1565
Garo Hills (West)		37.0		57.8		1562
Garo Hills (East)		17.1		26.1		1526
	5	88.1	82.8	143.1	86.0	1624
Khasi Hills (west)		9.2		13.2		1435
Garo Hills (South)		9.1		10.1		1110
	2	18.3	17.2	23.3	14.0	1273
	NIL					
	7	106.4		166.4		1564

Percentage is based on Districts total

Table. 18. Average area, production and productivity of Rice under productivity groups during Ninth five year plan

District	No of districts	Area (000 ha)	% of State rice area	Production (000 tonnes)	% of State rice prod.	Productivity
	NIL					
	NIL					
Aizawal(E)		17.5		34.3		1960
Kolasibe		13.7		24.9		1818
Lungeli		10.2		16.7		1637
Aizawal(W)		8.6		13.8		1605
	4	50.0	87.7	89.7	90.4	1794
chimtuipui		7.0		9.5		1357
	1	7.0	12.3	9.5	9.6	1357
NIL	NIL					
	5	57.0		99.2		1740
		58.8		103.5		1760

Percentage is based on Districts total

Table. 19. Average area, production and productivity of Rice under productivity groups during Ninth five year plan

District	No of districts	Area (000 ha)	% of State rice area	Production (000 tonnes)	% of State rice prod.	Productivity
	NIL					
	NIL					
Phek		24.7		38.0		1538
Kohima		29.6		45.1		1524
	2	54.3	36.3	83.1	38.3	1530
Wokha		23.9		34.5		1444
Tuensang		17.9		25.6		1430
Mon		17.6		24.5		1392
Mokokchung		20.8		28.9		1389
Zunhebato		15.1		20.2		1338
	5	95.3	63.7	133.7	61.7	1403
	NIL					
	7	149.6		216.9	216.8	1449

Percentage is based on Districts total

Table1 . Average area,production and productivity of Rice under productivity groups during Ninth five year plan

District	No of districts	Area (000 ha)	% of State rice area	Production (000 tonnes)	% of State rice prod.	Productivity
	NIL					
	NIL					
Baragarh		298.9		522.3		1747
Gajapati		38.8		65.9		1698
Sonepur		111.7		188.2		1684
Sambalpur		147.0		225.4		1533
	4	596.4	13.3	1001.8	17.5	1680
Ganjam		275.6		408.1		1481
Bhadrak		177.5		255.4		1438
Koraput		133.0		190.6		1433
Rayagada		65.5		92.2		1408
Nayagarh		102.8		143.9		1400
Khurda		125.4		171.9		1371
Balasore		247.1		328.1		1328
Cuttack		154.2		204.6		1326
Nawarangpur		155.7		200.4		1287
Phulbani		54.5		69.1		1268
Dhenkanal		125.2		154.6		1235
Jagatsingpur		101.3		123.6		1220
Mayurbhanj		340.3		414.9		1219
Kalahandi		241.9		291.2		1203
Jharsuguda		58.9		70.9		1204
Puri		166.2		197.4		1188
Boudha		66.6		75.6		1135
Angul		110.7		122.0		1102
Jajpur		146.9		158.8		1081
Kendrapara		146.0		154.6		1059
Keonjhar		211.3		220.8		1045
Malkangiri		90.3		93.0		1030
Bolangir		214.4		220.3		1027
	23	3511.3	78.1	4362.0	76.4	1242
Deogarh		49.7		49.5		996
Nawapara		105.4		93.1		883
Sundargarh		233.0		202.8		870
	3	388.1	8.6	345.4	6.1	890
	30	4495.8		5709.2		1270

productivity groups during Ninth five year plan

District	No of districts	Area (000 ha)	% of State rice area	Production (000 tonnes)	% of State rice prod.	Productivity
Fatehgarsahib		82.4		309.8		3760
Sangur		350.4		1305.0		3724
Ludhiana		237.0		879.8		3712
Moga		130.6		482.0		3691
Bhatinda		83.4		299.8		3594
Ferozepur		256.4		913.0		3561
Faridcot		77.6		268.4		3459
Jalandhar		132.2		451.0		3411
Patiala		248.4		827.6		3332
Nawansahar		45.4		151.2		3330
Kapurthala		100.4		333.6		3323
Mansa		77.0		254.6		3309
Mukatshar		70.0		231.6		3309
Ropar		47.8		149.6		3130
Amritsar		311.0		935.6		3008
Hashiarpur		59.8		176.2		2946
Gurudaspur		190.4		535.6		2813
	17	2500.2		8504.4		3401
	Nil					
	Nil					
	Nil					
	Nil					
	17	2500.2	100	8504.4	100	3401

Table. 22. Average area, production and productivity of Rice under productivity groups during Ninth five year plan

District	No of districts	Area (000 ha)	% of State rice area	Production (000 tonnes)	% of State rice prod.	Productivity
	NIL					
Hanumangarh		30.5		71.6		2348
	1	30.5	18.1	71.6	36.4	2348
Ganganagar		4.7		8.3		1766
	1	4.7	2.8	8.3	4.2	1766
Rajsamand		0.2		0.3		1500
Jhalawar		0.2		0.3		1500
Kota		5.9		8.8		1492
Bharatpur		3.8		4.8		1263
Alwar		0.4		0.5		1250
Bundi		41.8		48.9		1170
Dholpur		1.2		1.4		1167
Chittore		1		1.1		1100
Baran		2.7		2.9		1074
S.Madhapur		1.2		1.2		1000
Tonk		0.1		0.1		1000
Bhilwara		0.4		0.4		1000
	12	58.9	34.9	70.7	36.0	1200
Udaipur		7.5		5.1		680
Banswara		43.3		27.7		640
Karoli		2.4		1.5		625
Dungarpur		21.2		11.7		552
	4	74.4	44.2	46.0	23.4	618
	18	168.5		196.6		1167

District	No of districts	Area (000 ha)	% of State rice area	Production (000 tonnes)	% of State rice prod.	Productivity
Dindigul		25.7		123.1		4790
Namakkal		22.8		105.9		4645
Erode		61.0		276.8		4538
Kanyakumari		30.3		136.0		4488
Madurai		78.5		342.5		4363
Tuticorin		16.6		71.3		4295
Salllem		46.8		199.6		4265
Thirunelveli		82.8		350.0		4227
Thirucharapalli		72.4		297.5		4109
Thiruvallur		106.2		411.9		3879
Thane		20.2		77.9		3856
Vellore		62.2		227.1		3651
Coimbatore		14.2		51.0		3592
The Nilgiris		1.9		6.8		3579
Cuddalore		116.7		415.1		3557
Dharampuri		60.0		213.0		3550
Karur		16.2		57.5		3549
Villupuram		161.1		559.8		3475
Kancheepuram		158.1		530.5		3355
Pudukkottai		94.5		302.4		3200
Perambalur		47.9		151.9		3171
Thanjabhur		189.9		594.0		3128
Thiruvannamalai		114.6		354.9		3097
Virdhunagar		53.6		156.7		2924
Sivganga		65.4		176.6		2700
Nagapattinam		167.2		448.5		2682
Thiruvarur		165.7		439.2		2651
	27	2052.5	94.0	7077.5	96.5	3448
	NIL					
Ranthapuram		131.4		254.0		1933
	1	131.4	6.0	254.0	3.5	1933
	NIL					
	NIL					
	28	2183.9		7331.3		3357

Percentage is based on Districts total

**Table. 24. Average area, production and productivity of Rice under productivity groups during Ninth five year plan
State-Tripura**

District	No of districts	Area (000 ha)	% of State rice area	Production (000 tonnes)	% of State rice prod.	Productivity
		0				
	NIL					
West Tripura		100.6		226.5		2251
South Tripura		75.1		163.9		2182
North Tripura		41.1		83.3		2027
	3	216.8	87.9	473.7	89.9	2185
Dhalia		29.9		53.0		1773
	1	29.9	12.1	53.0	10.1	1773
	NIL					
	NIL					
	4	246.7		526.8		2135

Table. 25. Average area, production and productivity of Rice under productivity groups during Ninth five year plan State-Uttar Pradesh

District	No of districts	Area (000 ha)	% of State rice area	Production (000 tonnes)	% of State rice prod.	Productivity
Bijnor		64.1		182.7		2850
Pilibheet		142.6		399.7		2803
Chandauli		103.1		274.9		2666
Kushinagar		113.4		295.4		2605
Muzaffarnagar		40.3		104.1		2583
Bagpat		5.1		13.0		2549
Varanasi		49.1		123.3		2511
Ambedkar		110.9		277.6		2503
	8	628.6	11.0	1670.7	14.0	2658
Lakhimpur Kheri		192.1		479.4		2496
Saharanpur		74.5		180.9		2428
Shajahanpur		178.9		430.6		2407
Maharaj Nagar		166.4		399.9		2403
Jyotibapulgernagar		31.1		73.0		2347
Meerut		19.7		45.7		2320
Rampur		134.1		306.6		2286
Auraiya		47.3		107.9		2281
Muradabad		122.3		278.2		2275
Bulandshahar		34.2		77.0		2251
Etawah		53.6		120.5		2248
Kanpur (Dehat)		49.2		110.2		2240
Sant. Rabidasnagar		28.5		63.3		2221
Gautambuddhnagar		17.1		37.7		2205
Faizabad		94.8		205.2		2165
Mirzapur		100.6		217.4		2161
Ghaziabad		19.8		42.7		2157
Farukabad		18.0		38.6		2144
Jaunpur		122.1		259.6		2126
Sultanpur		156.9		332.5		2119
Ghaziipur		134.5		285.0		2119
Barieli		172.7		363.6		2105
Manpuri		60.3		126.9		2104
Mathura		35.1		72.2		2057
Deoria		120.7		248.0		2055
Barabanki		156.4		316.2		2022
Gonda		136.5		274.9		2014
Ajmagarh		202.7		405.8		2002
	28	2680.1	46.8	5899.5	46.9	2201

Contd/

District	No of districts	Area (000 ha)	% of State rice area	Production (000 tonnes)	% of State rice prod.	Productivity
Basti		114.4		228.1		1994
Sant. Kabirnagar		86.0		168.6		1960
Allahabad		177.1		344.4		1945
Kannauj		21.8		42.2		1936
Kaushambi		35.5		68.4		1927
Agra		1.3		2.5		1923
Hardoi		121.9		234		1920
Fatehpur		92.9		176.6		1901
Mau		88.4		167.2		1891
Aligarh		29.2		55.1		1887
Hatras		10.2		19.2		1882
Balia		117.9		220.8		1873
Pratapgarh		111.5		206.9		1856
Sitapur		155.5		284.9		1832
Kanpur(Nagar)		32.0		58.5		1828
Balarampur		89.5		163.3		1825
Baharaich		124.5		225.8		1814
Etah		38.0		68.2		1795
Raibareli		132.6		237.6		1792
Sonbhadra		82.5		147.0		1782
Sharawasti		71.8		126.6		1763
Firojabad		18.1		31.9		1762
Sidharthanagar		170.5		292.0		1713
Badaun		97.7		165.6		1695
Gorakhpur		146.2		245.5		1679
Lucknow		52.8		85.6		1621
	26	2219.8	38.8	4066.5	34.2	1832
Unnao		96.1		141.1		1468
Banda		64.4		81.6		1267
Chitrakut		17.8		20.6		1157
Hamirpur		1.5		1.7		1133
Mahoba		1.9		2.1		1105
Jalaun		1.7		1.7		1000
	6	183.4	3.2	248.8	2.1	1357
Jhansi		2.4		2.0		833
Lalitpur		8.1		6.3		778
	2	10.5	0.2	8.3	0.1	790
	70	5722.4		11893.8		2078

Percentage is based on Districts total

Table. 26. Average area, production and productivity of Rice under productivity groups during Ninth five year plan State-Uttranchal

District	No of districts	Area (000 ha)	% of State rice area	Production (000 tonnes)	% of State rice prod.	Productivity
U.S Nagar		106.7		316.8		2969
	1	106.7	34.7	316.8	51	2969
Nainital		16.7		39.8		2383
Hardwar		23.0		50.9		2213
	2	39.7	12.9	90.7	14.6	2285
Dehradun		13.6		27.0		1985
Tihari Garhwal		14.5		23.2		1600
Bageshwar		14.4		21.7		1507
	3	42.5	13.8	71.9	11.6	1692
Uttar Kashi		12.2		16.7		1369
Chamoli		13.3		17.5		1316
RudraPrayag		10.1		13.2		1307
Champawat		11.6		13.6		1172
Pithoragarh		27.1		31.3		1155
Pauri Garhwal		23.4		26.1		1115
Almora		21.2		22.6		1066
	7	118.9	38.6	141.0	22.7	1186
	Nil					
	13	307.8		620.5		2016

Percentage is based on Districts total

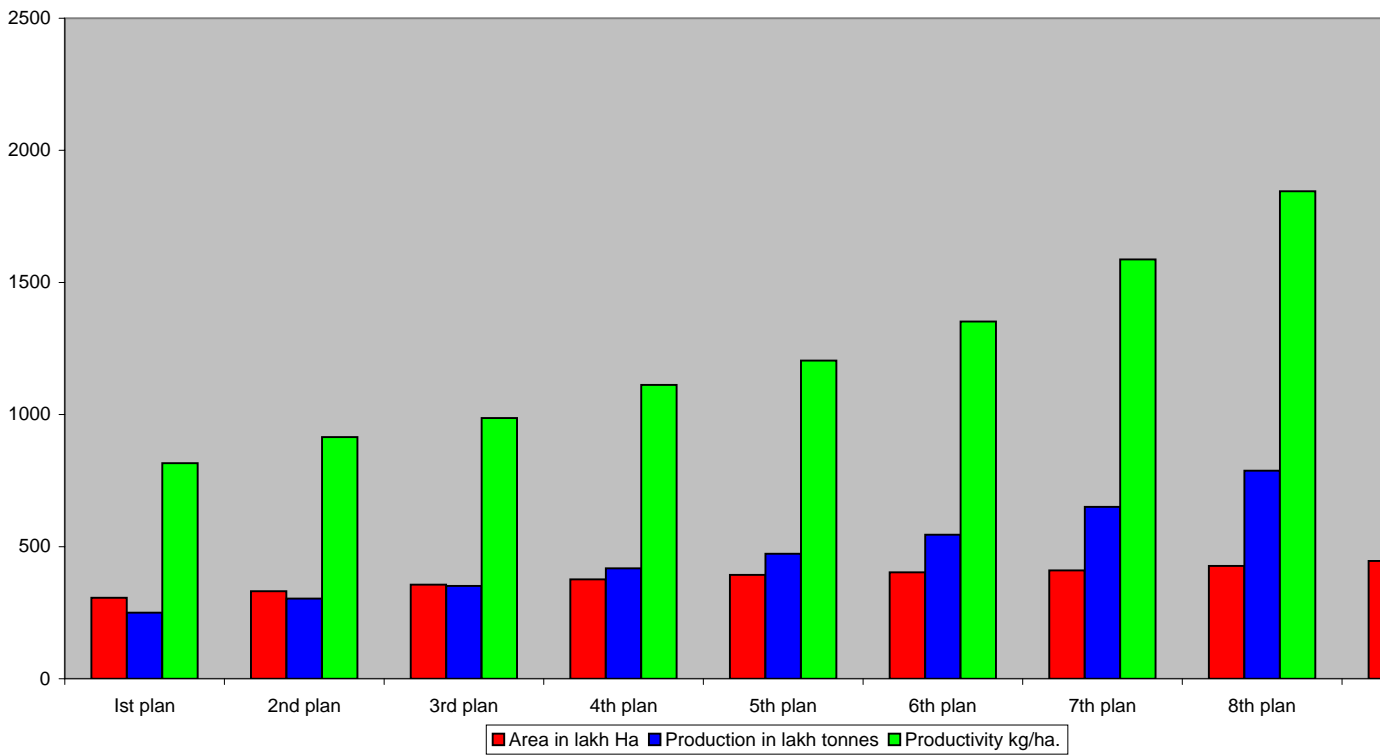
State-West Bengal

District	No of districts	Area (000 ha)	% of State rice area	Production (000 tonnes)	% of State rice prod.	Productivity
Burdwan		655.1		1887.1		2881
Birbhum		374.8		1040.9		2777
Nadia		300.0		803.3		2678
Hooghly		281.0		727.3		2588
Bankura		413.5		1067.9		2583
Murshidabad		343.1		879.1		2562
	6	2367.5	40.2	6405.6	47.1	2706
24 Parganas(N)		315.7		775.0		2455
Malda		225.0		525.3		2335
Midnapur(W)		581.6		1320.5		2270
Midnapur(E)		500.1		1093.9		2187
Dinajpur(S)		212.1		441.9		2083
Howrah		123.8		257.1		2077
Dinajpur(N)		273.2		563.9		2064
	7	2231.5	37.9	4977.6	36.6	2231
Purulia		282.2		543.7		1927

24 Parganas(S)		438.0		837.6		1912
Coochbehar		283.9		432.4		1523
	3	1004.1	17	1813.7	13.3	1806
Jalpaiguri		253.2		354.0		1398
Darjeeling		35.5		48.5		1366
	2	288.7	4.9	402.5	3	1385
	Nil					
	22	5891.8		13599.5		2308

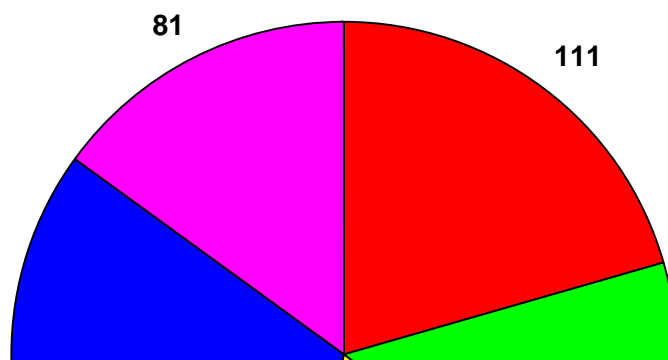
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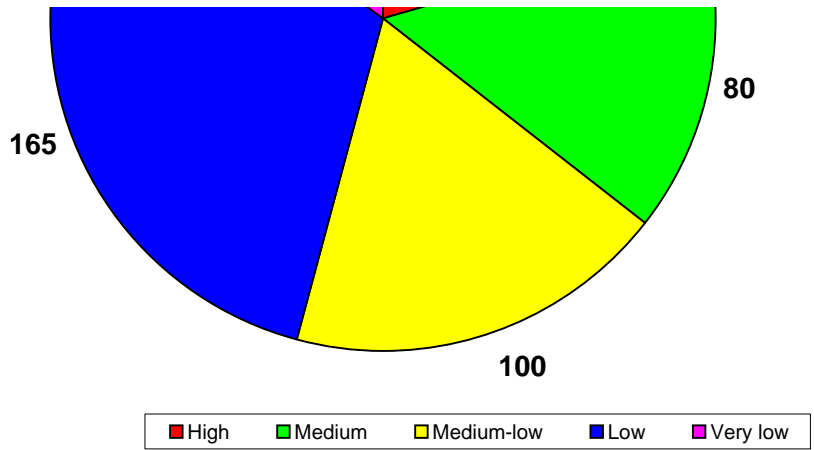
PLANWISE AREA, PRODUCTION AND PRODUCTIVITY OF RICE IN INDIA



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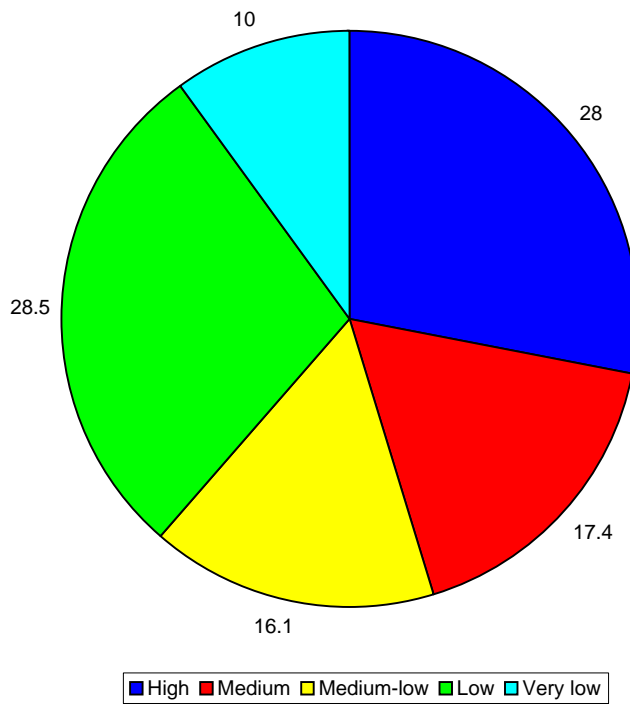
Number of Districts under Different Productivity Group during Ninth Plan (1997-98 to 2001-02)





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Percentage share of rice area under Different Productivity Group during Ninth Plan (1997-98 to 2001)



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Percentage share of rice production under different productivity group during ninth plan (1997-98 to 2001)

