Chapter 3

AGRICULTURE AND ALLIED ACTIVITIES

"If you desire peace, cultivate justice, but at the same time cultivate the fields to produce more bread; otherwise there will be no peace."

Norman Borlaug

Nobel Laureate & Father of Green Revolution

Agriculture is the mainstay in Telangana, as more than half of the State's population depends on it for their livelihood. Agriculture and allied sector's contribution to Gross Value Added (GVA) at current prices for the year 2015-16 (AE) is about 14 percent, declined from 16.1 percent in 2011-12. Agriculture and allied sector during 2015-16, is likely to record to a negative growth of -1.1 percent at current prises. Within the sector, the sub sector pertaining to agriculture crops was adversely affected due to the drought and is estimated to record a negative growth of -13.3 percent at current prices.

2015-16 has been a difficult year for the agriculture, as this was the second consecutive year of deficient rainfall, resulting in severe drought in the State. There was a decline in area under foodgrains from 26.13 lakh hectares in 2014-15 to 20.46 lakh hectares in 2015-16.

I. Agricultural Production, Area and Yields

Area under food and non-food crops: Net Cropped Area (NCA) in Telangana in the year 2014-15 was 43.8 lakh hectares, while Gross Cropped Area (GCA) was about 53.2 lakh hectares. Out of the total GCA, 30.7 lakh hectares (58 percent) was under food crops and 22.5 lakh hectares (42 percent) was under non-food crops. The important food grains cultivated in the State are rice, maize, jowar, bajra, pulses, etc. Cotton is an important non-food crop accounting for 32 percent of total GCA in the State.

Foodgrain crops (i.e., rice, wheat, coarse cereals and pulses) were cultivated in 26.1 lakh hectares in 2014-15, with a production of 72.2 lakh tonnes of foodgrains. Cultivated area under rice crop was about 14.2 lakh hectares in 2014-15, with a production of 45.5 lakh tonnes. Area under pulses was 4.1 lakh hectares in 2014-15 with the production of 2.6 lakh tonnes. Other important crops in 2014-15 include coarse cereals occupying 15 percent of total GCA, followed by pulses 8 percent and oil seeds 9 percent.

Area and Production in 2015-16: The production of food grains including cereals, millets and pulses has been estimated to be about 49.35 lakh tonnes in the current (2015-16) agriculture year as against 72.2 lakh tonnes last year. A sharp decrease in the production of paddy, the staple food in the State, has pulled down the total produce of food crops. Paddy output is estimated to be less than 30 lakh tonnes this year as against over 45.5 lakh tonnes last year.

Similarly, the production of pulses is estimated to be 2.5 lakh tonnes this year, against 2.6 lakh tonnes last year. The oilseeds production is likely to be 4.73 lakh tonnes as against 7.22 lakh tonnes last year. The details of Area and Production of food and non- food crops in 2014-15 and 2015 -16 are given in Table 3.1.

Table 3.1: Area, Production, and Yield in 2015-16

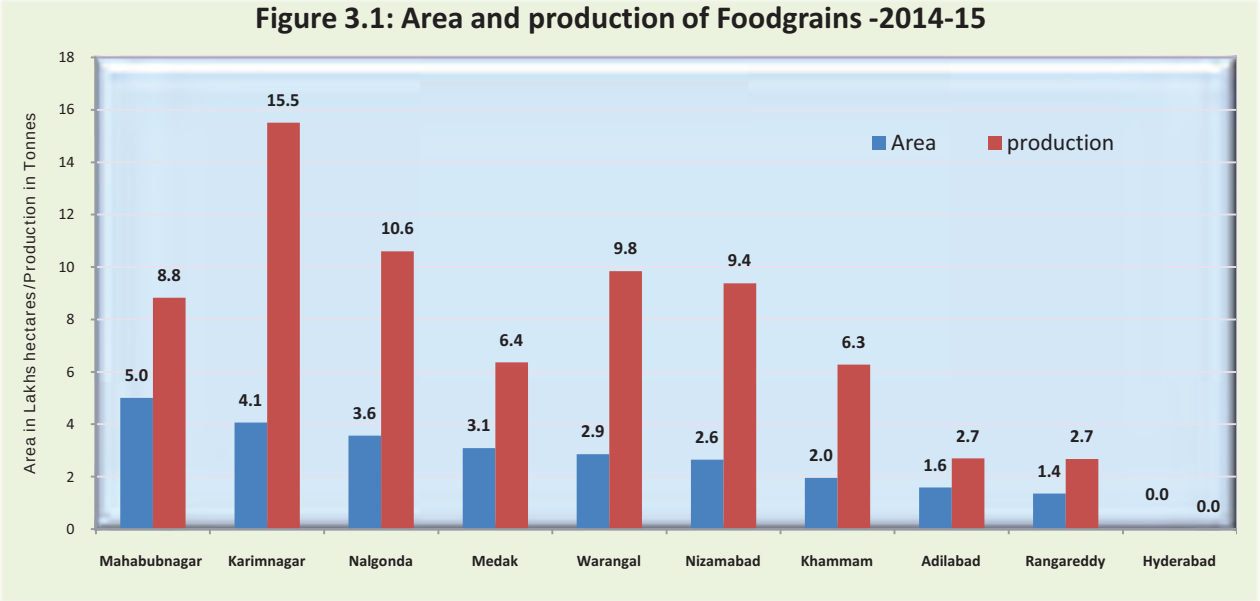
Crops	Area (Lakh Hectares)			Production (lakh tones)			Yield (kg/hectare)		
	2014-15	2015-16*	% Dev.	2014-15	2015-16*	% Dev.	2014-15	2015-16*	% Dev.
Rice	14.15	9.51	-33	45.45	29.79	-34	3211	3132	-2
Maize	6.92	5.56	-20	23.08	16.19	-30	3338	2912	-13
Cereals &millets	22.05	15.91	-28	69.55	46.85	-33	3155	2945	-7
Pulses	4.08	4.55	12	2.63	2.5	-5	644	549	-15
Food grains	26.13	20.46	-22	72.18	49.35	-32	2763	2412	-13
Groundnut	1.55	1.18	-24	2.95	1.82	-38	1907	1542	-19
Soyabean	2.43	2.44	0	2.62	2.55	-3	1081	1045	-3
Oil seeds	5	4.36	-13	7.22	4.73	-34	1442	1085	-25
Sugarcane	0.38	0.58	53	33.43	27.93	-16	87654	79795	-9
Cotton**	16.93	17.78	5	35.83	36.08	1	360	345	-4

Note: *2nd Advance Estimation

The prospects in Rabi season appear to be even worse, as the area under food crops sown is 5.32 lakh hectares, as against the normal area of 10.08 lakh hectares, showing the deficiency of 47% over normal area. Paddy is the worst-hit crop due to prevailing adverse seasonal conditions.

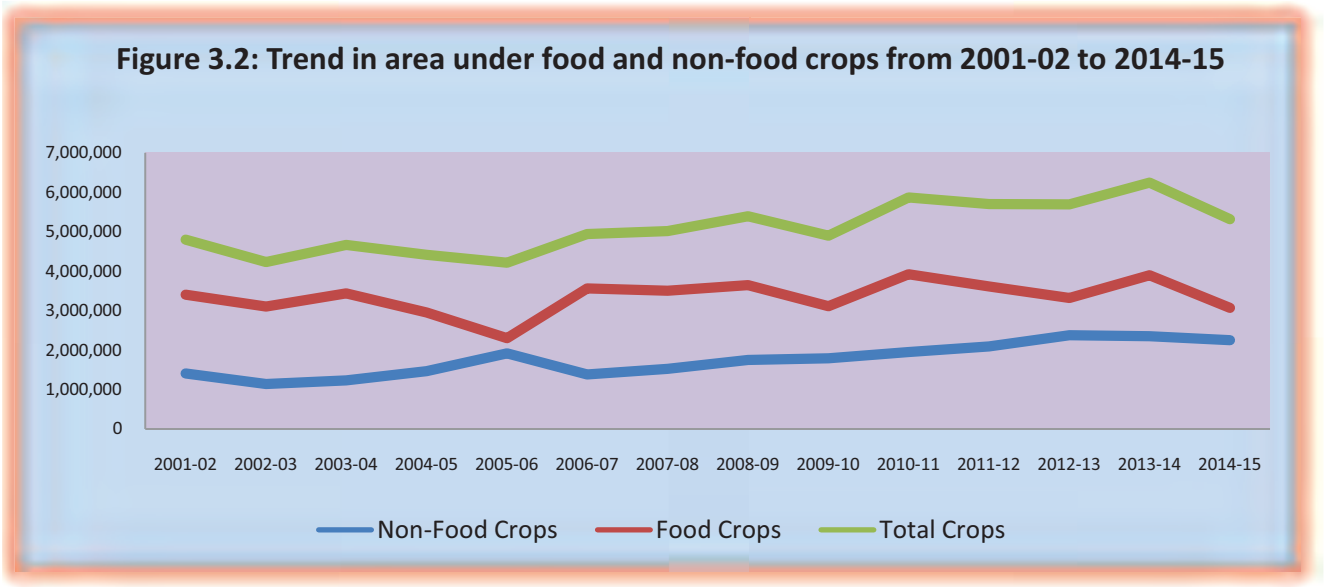
District-wise analysis: Among 10 districts of Telangana, Mahabubnagar, with 9.78 lakh hectares of land stand largest in terms of Gross Cropped Area in 2014-15, followed by Nalgonda and Karimnagar with 7.3 lakh and 7.0 lakh hectares, respectively.

Cereals, Millets and pulses occupy more than 50 percent of total GCA in Nizamabad, Karimnagar, Medak, Rangareddy and Mahabubnagar districts. Nalgonda (with 44 percent GCA) and Karimnagar districts (with 40 percent GCA) stand at the top in terms of area and production of rice in the state. With 2.10 lakh hectares area under coarse cereals, Mahabubnagar stands first in terms of area under coarse cereals and Karimnagar district stand first in terms of production of coarse cereals with 5.46 lakh tonnes. District-wise area and production of foodgrain during the year 2014-15 is shown in Figure 3.1. Cotton is a major non-food crop in Warangal, Karimnagar, Nalgonda, Adilabad and Mahabubnagar districts.



Changes in cropping pattern in Telangana: Food crops consisting of cereals, coarse cereals, pulses, and other food crops occupy lion share in total cropped area in the State. Research studies on State's cropping pattern reveals that more than one-third area was under food crops during 1980s. Cropping pattern from 1980s onward shifted to non-food crops in the State.

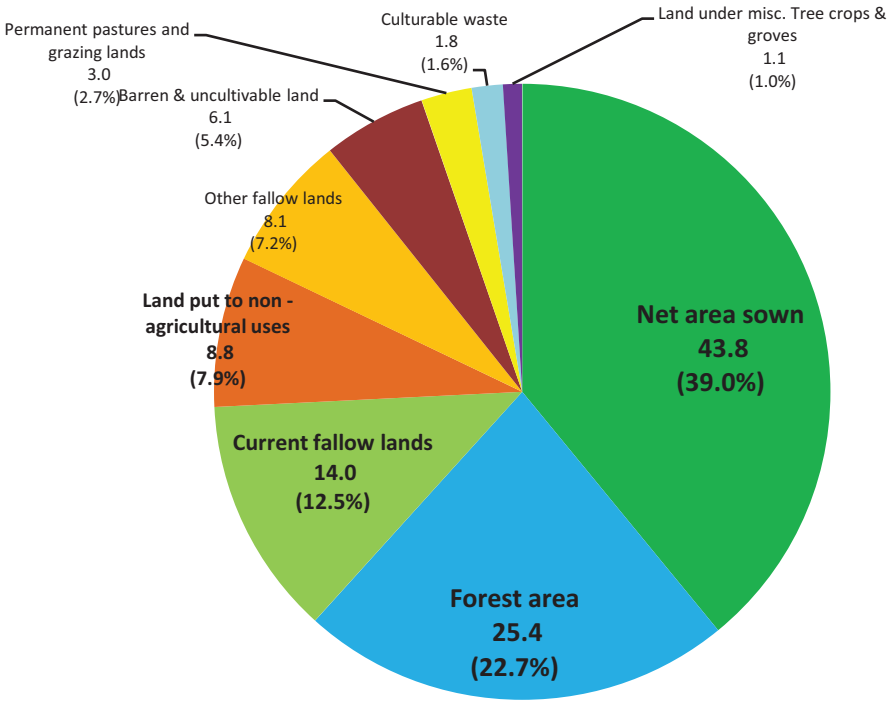
Of the total cropped area of 48 lakh hectares in 2001-02, around 71 percent was under food crops and 29 percent was under non-food crops. However, the share of food crops came down to 58 percent and the share of non-food crop to 42 percent during the year 2014-15. Even in absolute terms area under food crops came down from 33.98 lakh hectares in 2001-02 to 30.68 lakh hectares in 2014-15 (Figure 3.2). This indicates that area under food crops is decreasing in both absolute and relative terms and cropping pattern is shifting towards non-food crops.



II. Land Utilisation Pattern

Telangana State covers a geographical area of over 112.08 lakh hectares. Of the total area, about 39 percent is under agriculture and around 23 percent is under forest cover. Land put to non-agriculture uses is around 8 percent. Details of land utilisation pattern are given in the Figure 3.3.

Figure 3.3: Land Utilization Pattern in Telangana 2014-15



Agro Climatic Zones in Telangana:

Telangana State is divided into four agro-climatic zones based on the geographical characteristics such as rainfall, nature of soils, climate etc.: i) Northern Telangana Zone, ii) Central Telangana Zone, iii) Southern Telangana Zone and iv)High Altitude and Tribal Zone.

1. Northern Telangana zone: This zone includes Adilabad, Karimnagar and Nizamabad districts spreading over a geographical area of 35.5 sq. km. Annual rainfall ranges from 900 mm to 1150 mm, received mostly from south west monsoon. Maximum and minimum temperatures during this season ranges between 21^{0}C - 25^{0}C and 32^{0}C -37^{0}C respectively. Red soils are predominant in this zone, which include chalkas, red sands and deep red loams along with very deep black cotton soils. Rice, maize, soyabeen, cotton, redgram, and turmeric are important crops grown in this zone etc.

2. Central Telangana zone: This zone includes Medak, Warangal and Khammam districts and receives an annual rainfall of 800 mm-1150 mm. This zone spreads over a geographical area of 30.6 sq. km. Maximum and minimum temperatures during south west monsoon ranges between 21°C-25^{0}C and 22^{0}C-37^{0}C respectively. Red soils are predominant which includes chalkas, red sands and deep red loams along with very deep black cotton soils. Important crops grown in this zone include cotton, rice, maize, greengram, mango, and chillies etc.

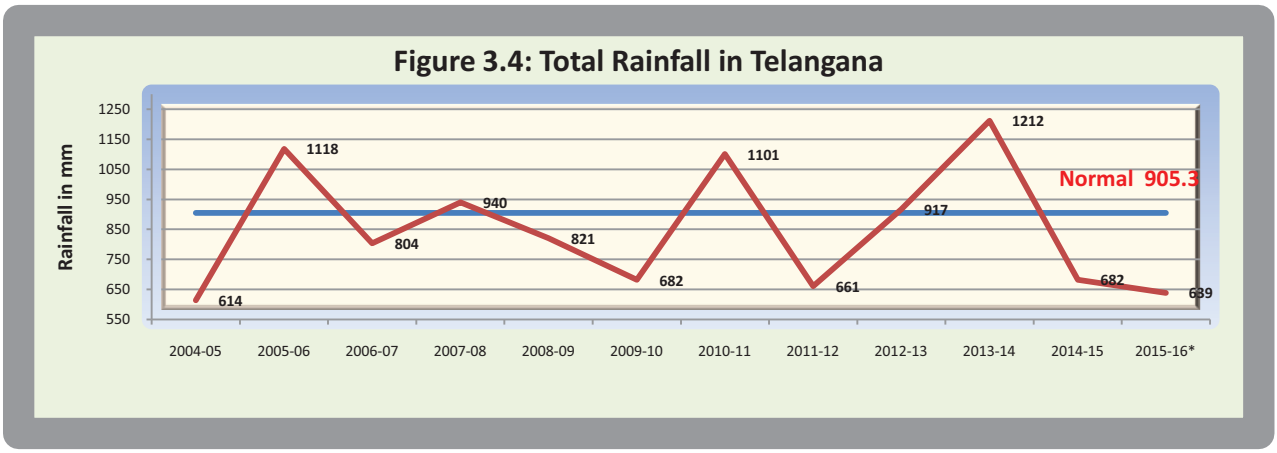
3. Southern Telangana zone: This zone comprises the districts of Rangareddy, Hyderabad, Mahabubnagar and Nalgonda, spreading over a geographical area of 39.3 sq. km. The annual rainfall is 600 mm -780

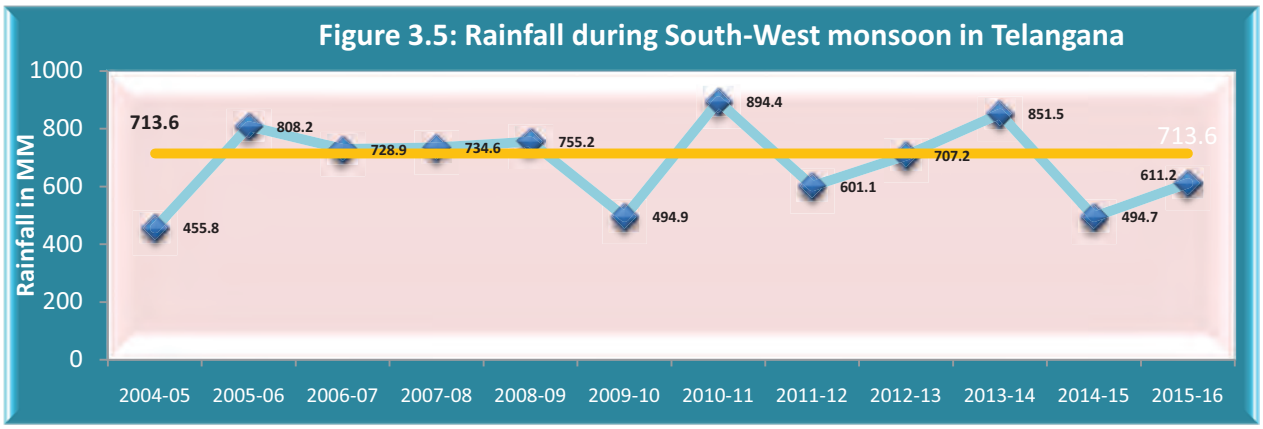
mm. Maximum and minimum temperatures during south west monsoon ranges between 28^{0}C-34^{0}C and 22^{0}C-23^{0}C respectively. This zone is predominantly red soil track having red with loamy sub-soil, i.e., chalkas. Important crops grown in the zone includes cotton, rice, redgram, maize, and greengram etc.

4. High Altitude and Tribal zone: This zone consists of the areas along Northern and Eastern borders of Adilabad and Khammam districts, spreading in about 4.66 sq. km and is mostly inhabited by Tribal population. The annual rainfall is around 1400mm.Important soils in this zone include red sandy loams, red loams with clay base along with very small patches of alluvial soils. The maximum and minimum temperatures during south west monsoon ranges between 13^{0}C - 27^{0}C and 29^{0}C - 34°C respectively. Important crops grown in this zone include chillies, rice, cotton and horticultural crops etc.

III. Rainfall

Normal rainfall of Telangana State is about 905.3 mm as against India's normal rainfall of 1083 mm. About 80 percent of the total rainfall in the State is being received during South-West monsoon (June to September). There has been an acute deficiency of rainfall in previous two years, i.e., 2014-15 and 2015-16. The actual rainfall received during South-West monsoon of 2014-15 was 494.7 mm as against the normal rainfall of 713.6 mm, recording a deficit of –31%. There was a deficit in rainfall in nine out of ten districts in the State (except in Mahabubnagar) during this period. Deficiency in rainfall in current year 2015-16 continued to persist. The State received an average rainfall of 611.2 mm during the South West Monsoon (June - September), as against the normal rainfall of 713.6 mm resulting a deficiency of -14% (Figure 3.5).





Note: *Total rainfall related to 2015-16 is upto end January, 2016.

Table 3.2: District Wise Status of Rainfall from 01-06-2015 to 30-09-2015

Sl. No.	District	Total No. of Mandals	No. of Mandals				
			No Rain	Scanty (-99 to -60%)	Deficient (-59 to - 20%)	Normal (-19 to 19%)	Excess (>19%)
1	Adilabad	52	--	--	21	31	--
2	Nizamabad	36	--	1	34	1	--
3	Karimnagar	57	--	-	27	27	3
4	Medak	46	--	2	41	3	-
5	Hyderabad	16	--	--	7	6	3
6	Rangareddy	37	--	2	23	10	2
7	Mahabubnagar	64	--	4	36	23	1
8	Nalgonda	59	--	-	15	32	12
9	Warangal	51	--	--	2	34	15
10	Khammam	41	--	--	3	27	11
	State Total	**459**	**--**	**9**	**209**	**194**	**47**

Source: Directorate of Economics & Statistics, Government of Telangana

Deficiency in Rainfall:

Deficiency in rainfall during 2014-15 and 2015-16 aggravated the drought conditions in the State hindering the growth of State's economy, in general and agriculture, in particular. Further analysis shows that 9 Mandals in the State has experienced more than 60 percent deficiency and about 45 percent of Mandals in the State have more than 20 percent deficiency in rainfall during South-West monsoon. District wise analysis shows that significant number of Mandals in the districts of Nizamabad and Medak received deficient rainfall (Table 3.2).

Adverse Seasonal conditions

The State constituted a Committee to identify the drought affected Mandals by considering the norms of rainfall deficiency, reduction in yield, area, dry spells, in addition to the Central government norms of Normalised Vegetation Difference Index (NDVI) and Moisture Adequacy Index (MAI), and the Committee recommended for declaration of 231 Mandals as drought affected Mandals during Kharif, 2015. District-wise drought affected Mandals are shown in Table 3.3.

Table 3.3: District- wise Drought Affected Mandals

Sl. No.	District	No. of Mandals
1	Mahabubnagar	64
2	Medak	46
3	Nizamabad	36
4	Rangareddy	33
5	Nalgonda	22
6	Karimnagar	19
7	Warangal	11
	Total	**231**

Action Plan to ameliorate impact of Drought:

1. State Government prepared an action plan for minimizing the adverse impact of the drought in the State. In order to undertake these activities, the State Government (through Drought Memorandum) requested the Government of India for assistance of Rs. 2515.03 crore. In response, the High Level Committee constituted by the Government of India assistance of Rs. 791 crore from the National Disaster Relief Fund (NDRF) in respect of drought in Telangana.

2. Government proposes to distribute input subsidy to drought affected farmers. In order to assess the crop damages and to ensure that input subsidy reaches the eligible, the State Government constituted joint teams consisting of Revenue and Agriculture officials to enumerate crop damages and prepare list of beneficiaries. It is estimated that an amount of Rs. 863 crore is required towards input subsidy as per Government of India norms for assisting about 20.9 lakh farmers in the State.

3. Horticultural crops such as fruit plantation, vegetable crops were affected in five districts due to drought. Though horticulture crops require less quantity of water as compared to field crops, water stress conditions affected the production capacity of trees leading to production losses. It is estimated that about 6,830 hectares crop was damaged by more than 33 percent due to drought. It is proposed to assist 7,136 small and marginal farmers with input subsidy of Rs. 9.65 crore.

4. Drought situation resulted in less availability of fodder for the livestock leading to nutritional deficiencies. Effective steps have been taken to save the livestock from production loss and mortality by adopting prompt action providing necessary fodder, feeds and intensive health cover. It is proposed to organise cattle camps in 231 drought declared Mandals of Telangana. The affected cattle will be provided fodder, feed, mineral mixture and medicine besides drinking water. It is proposed to provide an amount of Rs. 2.4 crore for transporting rice straw or maize or sorghum stovers from surplus areas by needy farmers in drought affected Mandals.

5. There are about 2 lakh fishermen who are unable to earn their livelihood due to reduced water spread area. It is proposed to provide nets and financial assistance to drought hit fishermen.

6. The Government of India issued instructions providing an additional 50 days of wage employment under Mahatma Gandhi National Rural Employment Guarantee Scheme (MNREGA) in the drought affected Mandals as relief employment.

IV. Landholding Pattern in Telangana

Land resource is a vital input for agriculture. Average landholding in Telangana in 2010-11 was 1.12 hectares (2.8 acres) as against the all India average of 1.16 hectares. Increase in population has put pressure, leading to fragmentation of landholdings. As shown in the Table 3.4, the share of marginal and small landholdings constitute about 86 percent of total landholdings in Telangana State in 2010-11, while their share in total area was around 55 percent. About 14 percent of total landholdings in the State were medium, ranging between 2 to 10 hectares, whereas their share in total area was 40.5 percent. District wise analysis shows that average landholding size was less than one hectare in Nizamabad, Karimnagar, and Medak districts showing skewed land distribution in the State.

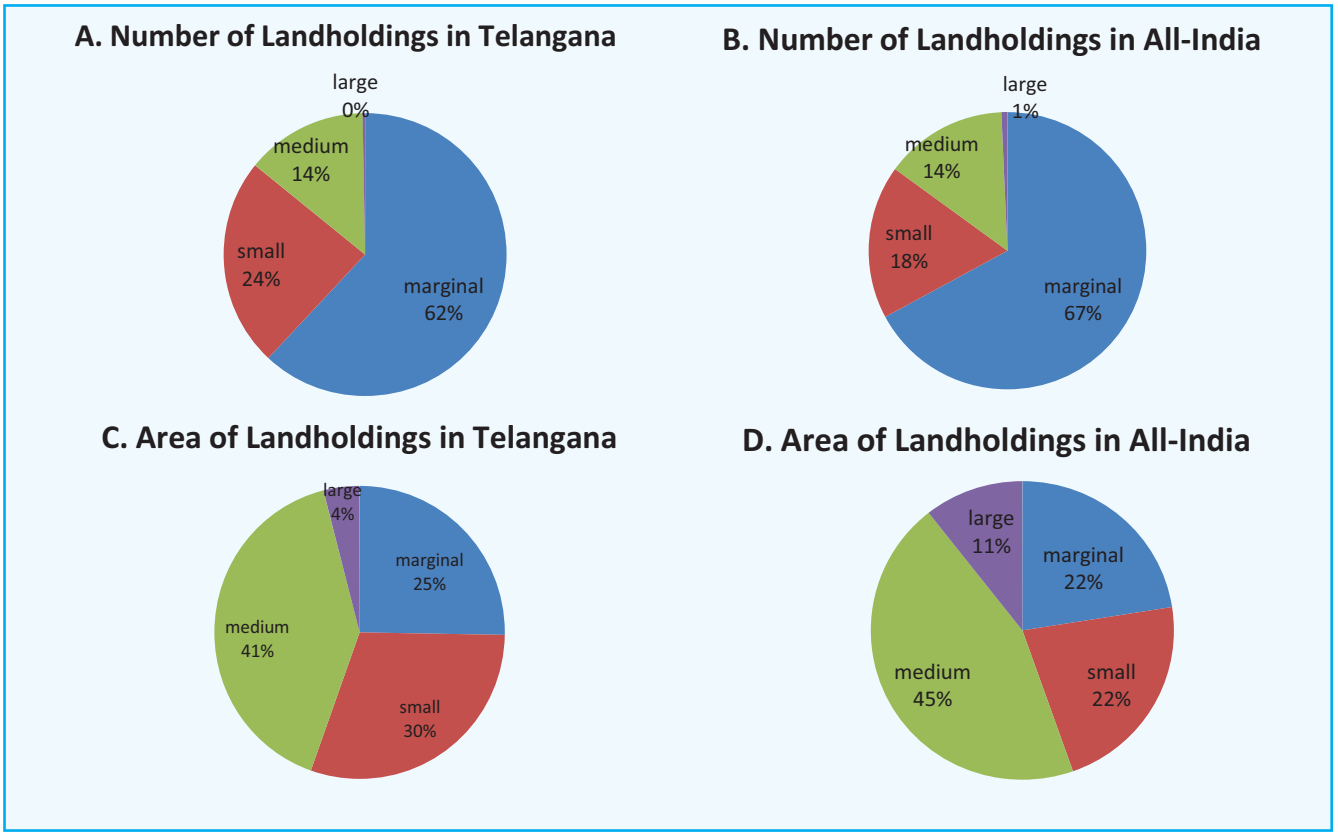
Table 3.4: Percentage Distribution of Landholding and Area in Telangana 2010-11

Sl. No.	District	Marginal (Upto 1.0 ha)		Small (1.0 - 2.0 ha)		Medium (2.0 - 10.0 ha)		Large (10.0 ha & above)		Avg. Land-holding Size (ha)
		Number (%)	Area (%)	Number (%)	Area (%)	Number (%)	Area (%)	Number (%)	Area (%)	
1	Adilabad	49.8	16.9	27.7	28.3	22.1	50.1	0.4	4.8	1.40
2	Nizamabad	67.5	33.9	23.8	36.1	8.6	28.5	0.1	1.5	0.92
3	Karimnagar	67.5	30.9	21.9	31.8	10.5	34.7	0.2	2.6	0.96
4	Medak	67.9	29.9	21.7	31.3	10.0	34.4	0.3	4.4	0.97
5	Hyderabad	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
6	Rangareddy	58.3	23.5	25.7	29.4	15.6	42.0	0.4	5.1	1.22
7	Mahabubnagar	57.9	22.0	25.4	29.5	16.3	44.0	0.4	4.5	1.23
8	Nalgonda	58.8	23.1	25.3	29.9	15.6	43.4	0.3	3.6	1.19
9	Warangal	67.1	28.6	21.4	29.7	11.2	37.0	0.3	4.7	1.01
10	Khammam	62.2	25.6	22.6	27.6	14.9	42.6	0.3	4.3	1.14
Total		**62.0**	**25.3**	**23.9**	**30.2**	**13.9**	**40.5**	**0.3**	**4.0**	**1.12**

Source: Statistical Abstract of Telangana-2015, DES, Government of Telangana

As compared with all India level, landholding pattern in Telangana is more evenly distributed. While 85 percent of total landholdings at all-India are marginal and small landholdings, farmers possess only 44 percent of total land as against, 86 percent of total landholdings in Telangana are marginal and small possessing 55 percent of total landholdings (Figure 3.6).

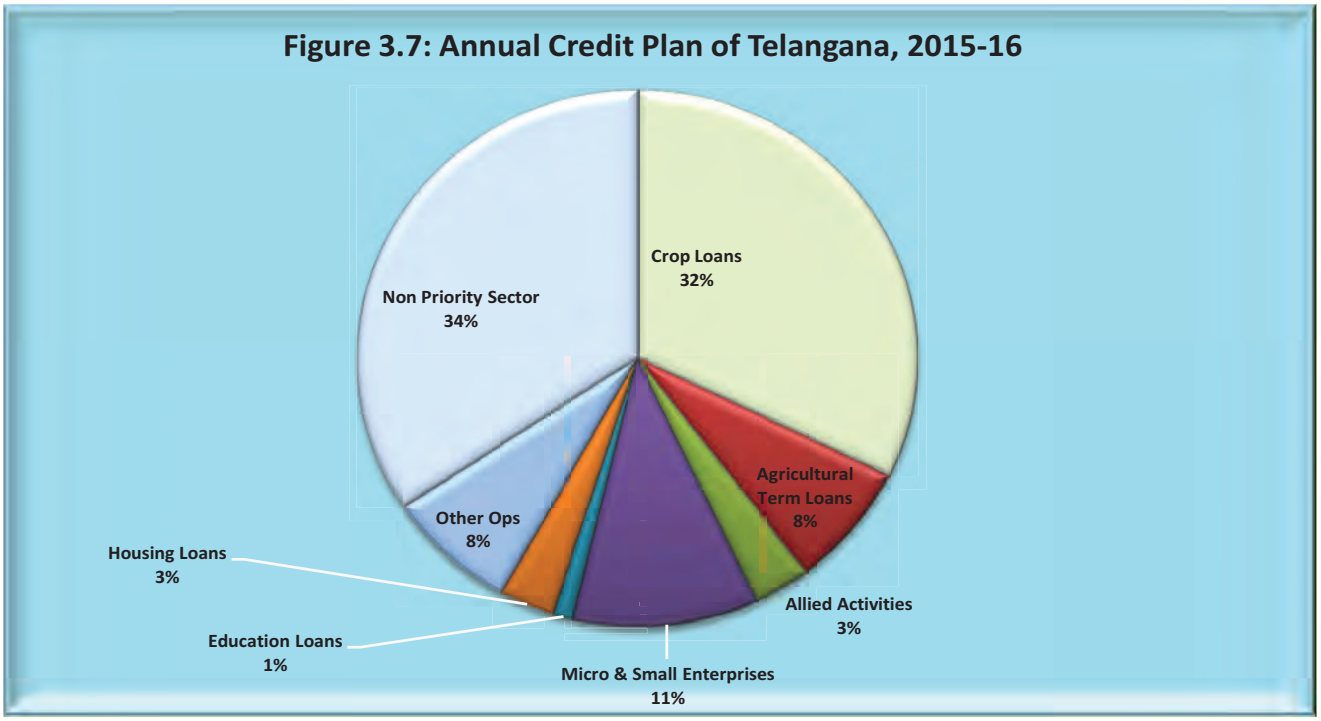
Figure: 3.6: Percentage distribution of landholdings and area in Telangana 2010-11



V. Agricultural Credit

Credit occupies an important place in agricultural development strategy. Out of the total projected credit plan of Rs. 72,119 crore during 2015-16 for Commercial Banks in Telangana, Rs. 30,995 crore credit is targeted for agriculture and allied activities, which is about 42 percent of total credit plan, showing 14percent increase over previous year allocation. About 32 percent of total credit plan is directed towards crop loans, 7 percent towards agricultural term loans, and 3 percent towards allied activities (Figure 3.7).

Figure 3.7: Annual Credit Plan of Telangana, 2015-16



Source: Annual Credit Plan of Telangana 2015-16, State Level Bankers' Committee (SLBC)

An amount of Rs. 23,209 crore is projected towards Crop Production Loans (Production Credit) in 2015-16, as against Rs. 18,718 crore in 2014-15. An amount of Rs. 7785.87 crore is projected towards agriculture term loans including allied activities (Investment Credit) in 2015-16.

Table 3.5: Telangana State Credit Plan for 2014-15: Targets and Achievements (Rs. Crore)

Sl. No.	Segment	Targets	Achievements	% achievement
1	Crops Loans	18,718	18,420	98%
2	Agri. Term Loans	6,238	5,985	96%
3	Allied Agri. Activities	2,277	2,872	126%
4	Total Agricultural (1+2+3)	27,234	27,276	100%
5	Micro & Small Enterprises	6,588	13,330	202%
6	Total Other Priority Sector	6,725	7,641	114%
7	Total Priority Sector (4+5+6)	40,547	48,247	119%
8	Non-Priority Sector	22,501	65,304	290%
	Total Advances (7+8)	**63,048**	**1,13,552**	**180%**

Source: Annual Credit Plan of Telangana 2015-16, State Level Bankers' Committee (SLBC)

Rs.48,247 crore was allocated towards priority sector in 2014-15 as against the projected target of Rs.40,547 crore, thus registering 19 percentage point increase. During the same year, Rs.27,276 crore was disbursed, as against projected credit plan of Rs.27,234 crore for agriculture sector (consisting of crop loans, agriculture term loans and loans to allied activities).However, it may be noted that Rs. 22,501 crore was targeted for non-priority sector and its achievement was about Rs. 65,304 crore showing an increase of about 290 percent (Table 3.5).

NSS Report on All India Debt and Investment Survey: Major findings for Telangana state

70th Round of the National Sample Survey (NSS) on "All India Debt and Investment Survey" (data collected during January 2013 to December 2013) gives a picture of the credit structure, asset holding, liabilities, capital formation of the households etc. Some of the highlights of the report pertaining to Telangana state are listed below:

- The average value of the asset for cultivator and non-cultivator in the rural Telangana household is Rs.13.9 lakh and Rs. 3.8 lakh respectively while at all -India level it is Rs. 28.7 lakh and Rs. 6.7 lakh respectively.
- The average asset value for rural household of Telangana is Rs. 6.38 lakh and that of urban Telangana is Rs 18.45 lakh, which is 2.9 times higher indicating high inequality between rural and urban population in the State.
- The Incidence of Indebtedness (IOI) among the households in rural areas of Telangana is twice higher than the IOI of rural All-India. Around 59% of rural household are indebted in Telangana State as against 31% in All-India.
- Indebtedness is higher among the cultivators as compared to other occupational category; about 74% of cultivators in Telangana are indebted.
- While the debt asset ratio among the rural and urban areas of Telangana is around 7.95 % and 8.58% respectively, in case of India it is as low as 3.23% and 3.7 % respectively.

Table 3.6: Incidence of Value of assets, Indebtedness and Debt in Telangana and India

Rural	Average Value of Assets (Rs.)	Incidence of Indebtedness (in %)	Amount of Debt (Rs.)	Debt-Asset Ratio
Telangana Rural				
Cultivator	13,89,460	74	84,423	6.1
Non-cultivator	3,80,024	54	39,142	10.3
All-India Rural				
Cultivator	28,72,956	46	70,580	2.5
Non-cultivator	6,74,527	29	25,741	3.8

Source: NSSO Report on Debt and Investment Survey (70th Round), Government of India.

Crop Loan Waiver Scheme:

Indebtedness is one of the major problems that farmers face in the State. As per the "All India Debt and Investment Survey" by National Sample Survey (NSS), 74 percent of the total cultivators in the State are indebtedness (See Box-3.1 for Details). The Government of Telangana has announced a one-time crop loan waiver to end the perpetual indebtedness of farmers through the Crop Loan Waiver Scheme.

Under the scheme, short term crops loans (including crop loans against gold) taken by farmers from scheduled commercial banks, cooperative credit institutions and regional rural banks and outstanding as on 31.03.2014 are eligible for waiver. The eligible amount for debt waiver is up to Rs.1 lakh, including loan amount and interest up to 31.08.2014. The waiver is scheduled to be paid in four instalments.

Table 3.7: District wise number of beneficiaries and amount released under Crop Loan Waiver Scheme

(Rs. Crore)

Sl. No.	District	No. of farmers benefitted as per UCs	1st year (2014-15) 25% Amount Credited	2nd year (2015-16) 25% Amount Credited	Total Amount Credited in 2 instalments
1	Adilabad	3,15,026	365.5	365.5	731.1
2	Karimnagar	3,73,267	415.6	415.6	831.3
3	Khammam	3,58,040	409.1	409.1	818.3
4	Mahabubnagar	5,98,990	673.9	673.9	1,347.8
5	Medak	3,96,191	483.2	483.2	966.3
6	Nalgonda	4,96,629	587.9	587.9	1,175.7
7	Nizamabad	3,79,520	393.4	393.4	786.8
8	Rangareddy	2,08,425	251.2	251.2	502.4
9	Warangal	4,03,856	460.2	460.2	920.3
	Total	**35,29,944**	**4,040.0**	**4,040.0**	**8,080.0**

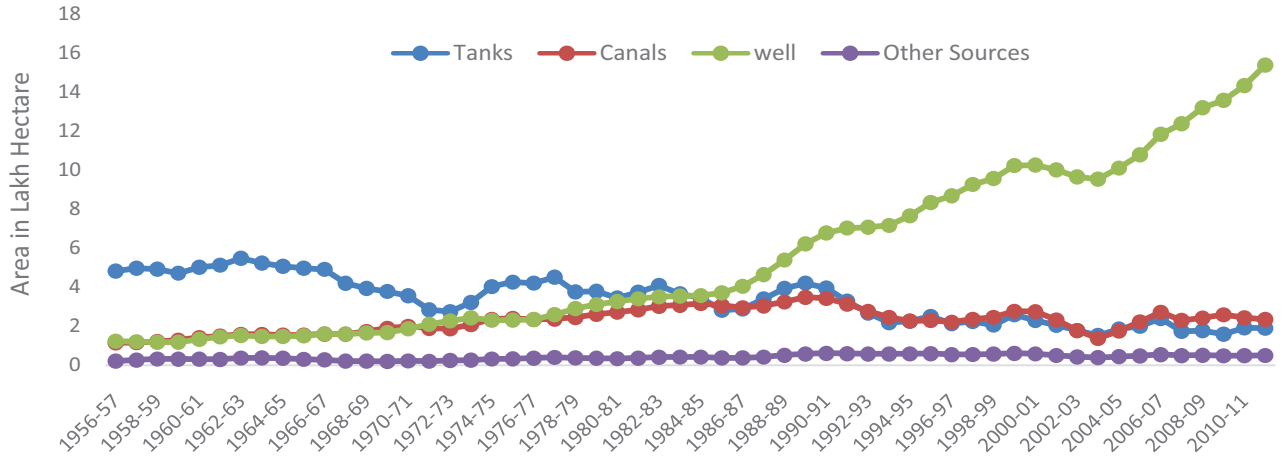
A total of 35.30 lakh farmers are availing benefits under the Crop Loan Waiver Scheme. District wise analysis shows that Mahabubnagar district has the largest beneficiary (5.99 lakh farmers) availing the scheme followed by Nalgonda (4.97 lakh farmers) and Warangal (4.04 lakh farmers). A total of Rs. 8,080 crore was disbursed in two instalments.

Government has constituted the audit teams in the districts under the supervision of District Collectors to check some selected banks for crop loan waiver scheme implementation. The reports are submitted to the Finance Department by the District Collectors. The State Government is taking all measures to identify and eliminate bogus beneficiaries under crop loan waiving scheme.

VI. Area under Irrigation

Irrigation plays an important role in increasing agricultural productivity. The Gross Area Irrigated in the State during 2014-15 was 25.29 lakh hectares as compared to 31.54 lakh hectares in previous year, showing a negative growth of -20 percent. Similarly net area irrigated came down from 22.8 lakh hectares (2013-14) to17.26 lakh hectares (2014-15), showing a negative growth of -24 percent during the same period. Source wise distribution reveals that wells are main source of irrigation in the State, irrigating about 82% of the total net irrigated area in 2014-15.The share of canal and tank irrigation is confined to mere 10 percent and 4 percent respectively.

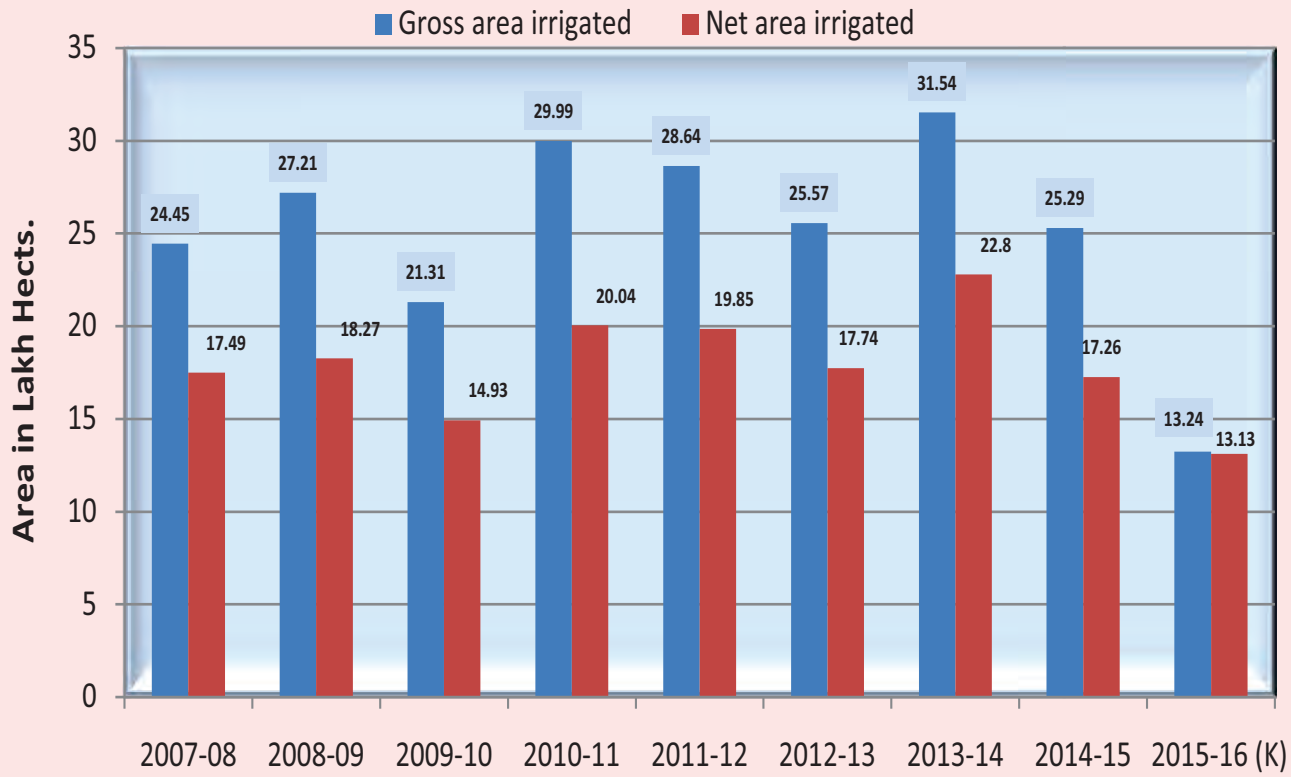
Figure 3.8: Trend in Area under irrigation according to Sources (Triennium Average)



Looking at trends of irrigation in Figure 3.8 (with triennium average) over a period of 60 years in Telangana reveals that there is as significant change in the usage pattern of major source of irrigation. While the tank and canal irrigation shows a declining trend over the years, the well irrigation shows a faster growth rate since 1985-86. The well irrigation which was 16 percent in 1955-56 was increased to 37% in 1985-86 and further increased to 84% in 2014-15. The tank irrigation was three times higher than the well and canal irrigation in 1956-57.Over a period of time, it has declined significantly. In the year 1956-57 the percentage share of tank irrigation was 65% which declined to 28% in 1985-86 and further to 10% in 2012-13. This is a clear indicator of deliberate neglect of thousands of tanks built during the Kakatiya's period. High dependency on wells have adverse effect on groundwater levels, therefore there is a need to increase tank and canal irrigation sources in the State. Hence, the Government has launched "Mission Kakatiya" to revive and rejuvenate tank irrigation. Government has also proposed to reengineer the canal irrigation projects and allocating substantial portion of budget to canal irrigation.

Gross and Net Irrigated Area: During 2014-15, the gross irrigated area in the State has decreased to 25.29 lakh hectares from 31.54 lakh hectares in 2013-14, showing a decrease of 19.82 percent. The net area irrigated in the State has also decreased to 17.26 lakh hectares in 2014-15 as against 22.80 lakh hectares in 2013-14, showing a decrease of 24.30 percent (Figure 3.9).

Figure 3.9: Gross and Net Area Irrigated from 2007-08 to 2015-16 (Kharif)



Irrigation Intensity: Irrigation intensity (ratio of gross irrigated area to net irrigated area) under all sources of irrigation is given in Table 3.9. Irrigation intensity under wells is 1.50 in 2014-15. Expansion in Gross and Net area irrigated has taken place due to the rise in well irrigation.

Table 3.9: Gross and Net Irrigated Area and Irrigation Intensity from 2007-08 to 2015-16 (Kharif)

Year	GIA under all sources (lakh ha.)	NIA under all sources (lakh ha.)	Irrigation intensity (all sources)	GIA under wells (lakh ha.)	NIA under wells (lakh ha.)	Irrigation intensity (wells)
2007-08	24.45	17.49	1.4	18.23	13.14	1.39
2008-09	27.21	18.82	1.45	19.810	13.10	1.5
2009-10	21.31	14.93	1.43	18.42	12.59	1.46
2010-11	29.99	20.04	1.5	21.11	13.96	1.51
2011-12	28.64	19.85	1.44	21.57	14.23	1.52
2012-13	25.57	17.74	1.44	22.07	14.86	1.49
2013-14	31.54	22.8	1.38	23.34	17.11	1.36
2014-15	25.29	17.26	1.47	21.16	14.13	1.5
2015-16 (K)	13.24	13.13	1.01	11.45	11.34	1.01

Source: Directorate of Economics and Statistics, Hyderabad.

Source-wise Irrigation: The source-wise net area irrigated from 2008-09 to 2014-15 is shown in Table 3.8. Net area irrigated by wells has been increasing, especially in last two years as a coping up strategy against the drought conditions. Net irrigated area by well increased from 74.83 percent in 2013-14 to 81.87% in 2014-15 and 86.37 percent in 2015-16 (Kharif), while the area irrigated by canals has increased from 5.07 percent in 2012-13 to 12.68 percent in 2013-14 and decreased to 10.08% in 2014-15.

Table 3.8: Percentage of Net Area Irrigated by source of Irrigation from 2008-09 to 2015-16 (Kharif)

Year	Net Area Irrigated (Lakh Ha.)	Source-wise Net Area Irrigated (%)		
		Canals	Tanks	Wells
2008-09	18.28	11.55	13.03	72.09
2009-10	14.93	9.18	3.82	84.33
2010-11	20.04	15.76	11.87	69.63
2011-12	19.85	16.37	9.22	71.69
2012-13	17.74	5.07	8.91	83.77
2013-14	22.89	12.67	10.05	74.83
2014-15	17.26	10.08	5.62	81.87
2015-16 (K)	13.13	3.43	8.38	86.37

Source: Directorate of Economics and Statistics, Hyderabad.

VII. Telangana as the Seed Bowl of India

Seed is the basic and vital input that could increase crop yields substantially, provided good management practices are followed with other inputs. Availability of diverse agro-climatic regions with cool and dry weather conditions round the year, made Telangana a congenial place for cultivating crops and production of quality seed. Since Hyderabad has excellent logistic services facilities and strategically located in the middle of the country connecting East-West and North-South, there is a high potential for the State to become a 'Seed Bowl of the Country'.

The State produces around 37.42 lakh quintals of seeds of various crops every year, consisting of paddy, hybrid paddy, maize, cotton and Bengal gram etc. At present, about 90-95% of hybrid rice seed production in the country is being taken up by different seed companies in Warangal and Karimnagar districts. Nizamabad supplies 100 percent seed requirements of hybrid jowar and bajra for the country.

Following are the potentials of the seed industry in Telangana:

- More than 60 percent of the nations seed requirement is being supplied from Telangana.
- All districts of Telangana are suitable for seed production.
- Production of seeds of all major crops.
- Cool and dry weather conditions helps in enhancing shelf life of seeds.
- Availability of efficient and economic seed processing plants and storage facilities.
- More than 400 seed companies are operating in and around Hyderabad
- presence of International, National and State institutes engaged in seed development such as, National Seeds Corporation(NSC), International Crops Research Institute for Semi Arid Tropics(ICRISAT), Indian Institute of Rice Research(IRR), Indian Institute of Oilseeds Research(IIOR), Indian Institute of Millets Research(IIMR) Telangana State Seeds Development Corporation(TSSDC), Telangana State Seed Certification Agency(TSSCA), and State Agricultural Universities.

Taking cognizance of the potentials, Government of Telangana has taken initiatives to develop modern infrastructural facilities such as assured power supply, provision of irrigation, seed storage godown and capacity building programmes for all stake holders for the growth of the seed industry in Telangana. The strategies followed by the Government include:

- Delineation of the suitable seed production clusters
- Strengthening of seed village programme
- Promoting seed production of millets, oilseeds, forage crops etc, as a social responsibility of seed industry
- Adoption of non-traditional areas for the seed industry
- Revival of all State Seed Farms
- Support for developing post-harvest facilities like seed processing plants, storage and transportation
- Explore the additional export potential
- Dedicated seed cell to co-ordinate all seed programmes
- Promotion of seed production co-operative societies
- Exploring the possibilities for development of Global Seed Valley/Hub
- Promotion of Public-Private Partnership in seed production.

The Department of Agriculture prepared a seed production plan for five years, which aims at attaining 100 percent Seed Replacement Ratio (SRR) in coordination with the universities and other agencies. Government has initiated all necessary steps to strengthen the seed chain by involving various Research Institutions, Government Departments, and private seed producing agencies.

Seed Village Programme: The main objective of the Seed Village Programme (SVP) is to ensure production and multiplication of certified/quality seeds of all crops and making them available to the farmers at affordable prices and to attain the required SRR in different crops.

There are 10 Seed Farms in the State with 536 hectares of cultivable area. The main objective is to produce foundation seed and supply them under Seed Village Scheme.

Export Potentials of Seed Industry: Apart from tapping the domestic markets, seed industry has got huge export potential as (i) There is lot of scope for marketing of seeds to the countries lying between 30^{o}N and

30°S latitudes and (ii) Due to similar agro climatic conditions and consumption pattern seed could be exported to Africa, Indonesia, Vietnam, Bangladesh and other developing countries.

VIII. Strengthening of Agricultural Extension

While agricultural research is one of the primary engines of growth in agriculture sector, it is important that these ideas are passed on to the farmers. A strong agricultural extension system, therefore, is the main vehicle to carry the fruits of research to the farmers and strengthen the Lab – to – Land process. It assists the farmers to acquire knowledge about the use of new agricultural technologies and to boost –up the crop productivity.

In view of rapid changes in agricultural technology, it is necessary that farmer's knowledge and skills are updated through extension services. As a part of agricultural extension, it is proposed to impart necessary knowledge, technology and new skills to farmers' community through following schemes:

(i) Mana Telangana - Mana Vyavasayam: Mana Telangana - Mana Vyavasayam scheme was undertaken prior to the commencement of Kharif season, 2015, covering the agricultural populated habitations in all the Mandals of 9 districts of the State (except Hyderabad). In order to give a holistic training Mana Telangana - Mana Vyavasayam team, comprising of officers from various departments such as Agriculture, Animal Husbandry, Horticulture and Sericulture participated in the training programmes, creating awareness among farmers about the welfare programmes undertaken by the Government and give effective input planning for Kharif/Rabi season.

(ii) T & V Monthly Workshops: Training & Visit (T&V) monthly workshops are being held regularly at identified research stations of Prof. Jayshankar Telangana State Agricultural University (PJTSAU) in all districts, where the departmental officers and scientists of PJTSAU discuss about the present crop situation and suitable measures that are needed to be adopted to overcome the challenges.

(iii) Farmers & Farm Women Trainings: The Farmer Training Centers (FTCs) located in the districts are entrusted with the responsibility of conducting the training programmes to the farmers and impart them the knowledge on various subjects such as SMSRI method, organic farming, post-harvest technology, rodent control, drip irrigation, IPM, INM, farm mechanization, water management.

Under Farm Women Empowerment Programme, skill based trainings are organized to women farmers to upgrade their skills and knowledge.

(iv) Training of farmers on Integrated Farming: Farming alone will not be profitable to farmer. Training programmes are being organized to farmers through nine FTCs to undertake crop diversification along with other allied activities such as dairy farming, poultry, floriculture, sericulture, fish farming, beekeeping, composting and production of gobar gas to get maximum benefits by proper utilization of available resources in their farm holdings and ensure constant flow of income throughout the year. It is also proposed to conduct one training program per year to 50 young farmers in each village.

(v) Training of farmers on Development of Crop Colonies: There is a necessity to increase the productivity of rice, maize, redgram, Bengal gram, groundnut, soyabean, castor, and oilseed crops in Telangana State. It is proposed to develop crop colonies and improve cultivation practices to achieve maximum production in these crops by conducting training programmes in the districts through 9 FTCs to the farmers during 2015-16.It is proposed to conduct one training programme in Kharif and one in Rabi season to impart training to 50 farmers at cluster level on production of Rice, Maize, Pulses and oil seeds crops.

(vi) Training to Young Farmers: Youth is not attracted towards farming due to poor returns and other problems such as availability of credit, technology, extension services, shortage of labour etc. This is due to lack of knowledge on modernization of agriculture and efficient utilization of available resources among the farming community.

Thus, there is need to design the trainings such that it should create interest among the young farmers towards farming and should generate sense that farming is financially remunerative to them. Therefore it is proposed to take up intensive trainings to farmers, farm women and young farmers through 9 FTCs to orient them towards farming. It is proposed to conduct one training per year in each Mandal.

(vii) Zonal Research & Extension on Agriculture Conferences: Zonal Research & Extension on Agriculture Conferences (ZREAC) are being organized every year in the month of April. Research scientists from various universities and extension workers of Department of Agriculture will attend the conference and exchange their experiences on seasonal conditions, suitable crop varieties and crop related problems and prepare a plan for the next season. The recommendations of ZREAC will be communicated to the extension staff to follow up in the ensuing crop seasons.

Apart from these programmes, it is proposed to appoint 1000 posts of Agricultural Extension Officers. This will establish close and effective contact with farmers at field level and enable a vibrant extension network in the State.

IX. Farm Mechanization

Mechanization of agriculture will help in increasing the productivity and reduce the cost of cultivation and also enable the farmer to complete farming operations in time. Farm mechanisation in the State is accentuated by the shortage in agriculture labour due to increased migration of rural workers to urban areas. Mechanization possibility is strongly influenced by the farm size, cost of farm labour, machines and energy. However, most of the farming is carried out on small holdings in the State, farming system continues to utilize manual power, animal power and tractor power. In order to bring more land under cultivation and to improve productivity per unit area it is necessary to introduce other sources of power like tractors, power tillers and renewable energy.

Depending on the types of crops grown, soil conditions, local situations and requirements in the districts, the Government is contemplating to distribute various farm machinery and implements on subsidy basis.

The Farm Mechanization Scheme is being implemented in the State for encouraging mechanisation of farming by supplying various farm implements i.e. animal drawn implements, tractor drawn implements, high cost machinery, mini tractors, post-harvest equipment, plant protection equipment, inter-cultivation equipment HDPE tarpaulins and establishment of Custom Hiring Centers for paddy land preparation package, CHC for cotton, maize, paddy harvesting & mini sugarcane package. The subsidy proposed under this scheme is 50 percent and the maximum permissible limit varies depending on the type of machinery. Apart from this, Rashtriya Krishi Vikas Yojana and Sub-Mission on Agricultural Mechanization are also being implemented for advance farm mechanisation.

Box 3.1 Success Stories of Farm Mechanization

Case -1: Custom Hiring Centre for Cotton

Sri Anjaneya Rythu Mithra Group was formed in March 2015 in Pagidipalli village of Kamalapur Mandal, Karimnagar district to set up Custom Hiring Centre (CHC) for the supply of farm machines to cultivate cotton crop by mechanized operations. The Group was supplied with Tractor, Rotovator, Multi Crop Planter, Power Weeder and Boom Sprayer at a subsidised rate.

The farmers of Pagidipalli are now happy that they are making use of tractor and the rotovator for field preparation. The service is extended to farmers in the village on fixed charges. Many of the farmers in the village are hopeful of taking up cotton sowings in time. In addition the tractor is engaged on hire for "Mission Kakatiya". The Shri Anjaneya Rythu Mithra Group is charging Rs. 80 to 150, for shifting of tank silt to nearby fields of the farmers to enrich the soil physical condition and fertility.

Case-2: Seed Cum Ferti-Drill

Sri Narsimhulu, a resident of Mogdumpur village, Mahabubnagar district purchased the tractor drawn ferti cum seed drill on subsidy. Using the new ferti cum seed drill he has sown maize in his 8 acre land within a day. The farmer is satisfied with the performance of the implement, since basic application of nitrogen, phosphorus, and potassium fertilizer is a smooth affair ensuring even distribution in the field and uniform placement in the soil at a desired depth along the seed rows, yielding excellent population stand. He further explains that there is saving in labour cost, fertilizer application and sowing operations. He is anticipating higher yield advantage with optimum plant stand and uniform crop growth, which was not possible with his traditional practices of country seed drill and conventional application of fertilizers.

X. Agricultural Marketing

Efficient agricultural markets are important for determining right and remunerative prices for agricultural commodities. Telangana is one of the few States where the Agricultural Produce Market Committees are functioning well and are accessible to farmers. In order to strengthen this infrastructure, Government has been taking various initiatives such as (i) Establishing new Market Committees and (ii) undertaking agricultural marketing reforms, (iii) Construction of scientific godowns and (iv) Streamlining of existing marketing program.

(i) Agricultural Marketing System: The regulated agricultural marketing system in the State is operating through a network of Agricultural Market Committees. There are 183 Agricultural Market Committees in Telangana State. The Government has taken steps to establish 33 more new Market Committees for the benefit of farmers.

(ii) Agricultural Marketing reforms: To bring about suitable changes in the Agricultural Marketing a State level committee was constituted in July, 2014. The committee has submitted its report recommending comprehensive electronic platform services i.e., Computerized Auction system, Check post automation, online filing of returns, Generation of Electronic transport permits, office automation etc., and also quality based pricing and warehouse based sales for online trading.

(iii) Construction of scientific godowns: The Government, in collaboration with NABARD, has proposed to construct godowns at 330 locations with Storage Capacity of 17.075 lakh metric tonnes with an estimated cost of Rs. 1024.50 crore (Table 3.10).

Table 3.10: District wise details are Godowns being constructed in Telangana

Sl. No.	Name of the District	Number of Godowns being constructed	Capacity (in Metric tonnes)	Amount (Rs. Crore)
1	Mahabubnagar	54	3,07,500	184.5
2	Medak	43	2,30,000	138.0
3	Rangareddy	19	82,500	49.5
4	Nalgonda	31	1,55,000	93.0
5	Khammam	25	1,17,500	70.5
6	Nizamabad	32	1,65,000	99.0
7	Warangal	45	2,17,500	130.5
8	Karimnagar	36	1,82,500	109.5
9	Adilabad	45	2,50,000	150.0
	Total	**330**	**17,07,500**	**1,024.5**

Source: Department of Agricultural Marketing, Government of Telangana

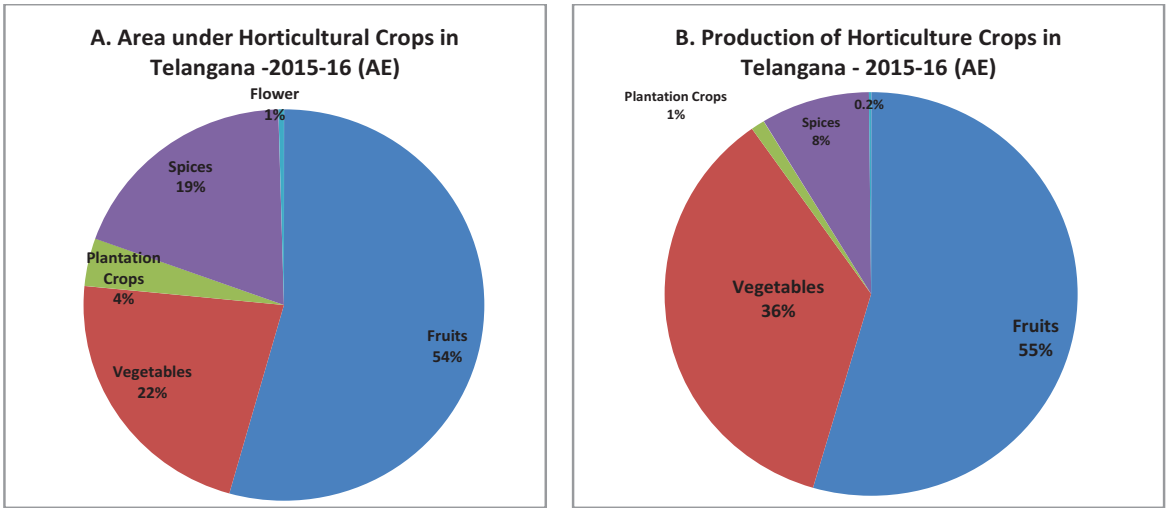
(iv) Renewed efforts are being put to the existing scheme such as Rythu Bandu Pathakam, Mana Kuragayalu and Rythu Bazars in terms of finances and infrastructure.

XI. Horticulture

Horticulture is a major sub sector of agriculture sector and important for its growth. Horticulture is a significant contributor to the economy by generating employment to unskilled and semiskilled rural poor. As per the 1st Advanced Estimates, horticulture crops are grown in an area of 7.01 lakh hectares in 2015-16 producing about 74.79 MTs output. Of the total horticulture cultivated area, fruits constitutes around 54.5%,

followed by vegetables and spices with 22.2% and 19.1% respectively. Floriculture constitute about 0.4% of area under horticulture. Out of the total production of horticulture in 2015-16, fruits constitute around 55% followed by vegetables, spices and flowers with 36%, 8% and 0.2% respectively (Figure 3.10).

Figure 3.10: Distribution of Area and Production among the Horticulture Crops



Out of the total horticulture area, highest area is covered by mango 29%, followed by mosambi 19%. Among vegetable crops, tomato and onion cover around 33% and 15% of the area respectively and 39 % and 16% of production under vegetable. Among spices, the turmeric and red chilli cover around 41% and 31% of the area and 55% and 20% of production respectively. Among flowers, marigold covers around 50% of the area and 65% of production.

Major Schemes for promotion of Horticulture in Telangana:

1) Micro Irrigation Project: The major objective of the Micro Irrigation scheme is to achieve more productivity with less water through micro irrigation system. In addition, micro irrigation benefits farmers with less fertiliser, pesticide use, labour cost. Estimated monetary benefits accruing through micro irrigation in the State is given in the Table 3.11.

Table 3.11: Impact evaluation of the Telangana State Micro Irrigation Project		
1	Area covered	5.33 lakh ha (13.17 lakh acres)
2	Additional productivity	Rs.790.20 Cr @ Rs.6000/- per acre
3	Labour Saving	Rs.263.40 Cr @ Rs 2000/- per Acre
4	Fertilizer & Pesticides Saving	Rs.131.70 Cr @ Rs 1000/- per Acre
5	Energy saving	Rs 171.21 Cr @ Rs 4/- per Unit
6	Water saved (145.4 TMC)	Rs 13,170 Cr @ Rs1.00 lakh /Acre)

Recognising the importance of micro irrigation, subsidy is extended upto 5 hectares of land to all categories of farmers as compared to the earlier limitation of Rs. 1.0 lakh subsidy per family with coverage of 1Ha in erstwhile Andhra Pradesh.100 percent subsidy is being provided to farmers belonging to Scheduled Castes and Scheduled Tribes, 90 percent to small and marginal farmers and 80 percent to other farmers. Farmer having once availed subsidy under MIP, is eligible for fresh sanctions after a period of 5 years. During the year 2015-16, it is proposed to cover an area of 39,620 hectares and so far about 36,852 hectares is covered under the scheme.

Box - 3.2 : Success Story: Micro Irrigation Project

Name of the Crop: Marigold	With Conventional Irrigation	With Drip Irrigation
Yield (per ha.)	120 Qtl	240 Qtl
Total Expenditure (per ha.)	Rs. 2,10,000/-	Rs. 1,50,000/-
Sale price (per Qtl.)	Rs. 2,000/-	Rs. 3,000/-
Total value of the crop (per ha.)	Rs. 2,40,000/-	Rs. 7,20,000/-
Net Income (per ha.)	Rs. 30,000/-	Rs. 5,70,000/-
Additional income with Micro Irrigation (per ha.)	--	Rs. 5,40,000/-


Name of the Crop: Bitter Gourd & Coccinea	With Conventional Irrigation	With Drip Irrigation
Yield (per ha.)	18 MT	30 MT
Total Expenditure (per ha.)	Rs. 50,000/-	Rs. 40,000/-
Sale price (per T)	Rs. 14500/-	Rs. 14500/-
Total value of the crop (per ha.)	Rs. 2,61,000/-	Rs. 4,35,000/-
Net Income (per ha.)	Rs. 2,11,000/-	Rs. 3,95,000/-
Additional income with Micro Irrigation (per ha.)	--	Rs. 1,84,000/-

2) Establishment of Green Houses/ Polyhouses: Establishment of Green Houses/ Polyhouses is a flagship programme of the State Government. Polyhouses scheme is being implemented since 2014-15 with the following major objectives: (i) Enhancing productivity per unit area, (ii) Promotion of high value Horticulture crops under Poly houses, and (iii) Year round production of flower and Vegetable crops.

The Polyhouse Scheme is being implemented to encourage year round production of vegetable and flower crops to enhance productivity and to meet the demand. Farmers are provided 75 percent subsidy with a maximum of Rs 29.52 lakh per acre. Beneficiaries are eligible up to minimum of 200 sq.mts., and maximum of 3 acres. Preference is given to small farmers with a landholding of 0.5 to 1.0 acre area. The farmers are given choice for construction of poly houses on their own or through registered companies. So far in an extent of 245 acres works were initiated and the number of beneficiaries covered are196, in Rangareddy, Medak, Mahabubnagar, Nalgonda and Karimnagar districts.

Box 3.3. Success Stories: Use of Green House

Best Practices – GREEN HOUSE

Name of the Farmer	**: RANGAM ANJANEYULU**
Father's Name	: R.Balraju
Village	: Tatikonda
Mandal	: Bhoothpur, Mahaboobnaga
Area under Green House	: 4000 Sq.mts
Variety Grown	: Gerbera
Yield	: Avg.3000 Flowers per day
Cost of each Flower	: Rs.2/- (Average)
Gross Income per Month	: Rs.1,80,000/-
Expenditure including maintenance	: Rs.80,000/- per month
Net Income per Month	: Rs.1,00,000/- (Average)

3) Mission for Integrated Development of Horticulture: Mission for Integrated Development of Horticulture scheme is a sub scheme of National Horticulture Mission, being implemented to promote holistic growth of horticulture sector through research, technology promotion, extension, post-harvest management, processing and marketing. Rs. 81 crore have been allocated for implementation of the scheme during 2015-16, of which Rs.36.27 crore have been spent so far on activities such as establishment of new gardens, rejuvenation of senile gardens, training, farm mechanization and post-harvest management etc.

4) Post-Harvest Management: Horticulture crops are highly perishable and require special attention on harvesting, handling, packaging, storage and processing operations. The focus is on development of post-harvest infrastructure facilities like Pack houses, Cold storages, Refer Vans, Ripening Chambers etc. Assistance is extended to 8 Cold storages, 3 Ripening Chambers and 55 Turmeric boiling units.

5) Establishment of Centre of Excellence for fruits, flowers and vegetables crops: Two Centres of Excellence for fruits, flowers and vegetable crops are being established in the State at Jeedimetla in Rangareddy and Mulugu in Warangal district to supply quality seeds and planting material for farmers growing horticultural crops, apart from providing demonstration and training. A Centre of Excellence for Fruits is also proposed to establish as an Indo-Israeli Project, incorporating all the aspects of fruit cultivation right from planting to post-harvest management.

Further, to promote procurement, storage, processing and marketing of horticulture products in the State, it is proposed to set up Telangana Horticulture Development Corporation. Sri Konda Laxman Telangana State Horticulture University has been set up towards in Mulugu of Medak District.

6) Urban Farming: Government is providing seed mini-kits, poly bags, potting mixture, neem cake, neem oil and tools at 50% subsidy to cultivate vegetable on terrace and balconies in urban areas. The objective of the Scheme is to encourage urban households to produce sufficient quantities of vegetables throughout the year.

XII. Animal Husbandry

Animal husbandry provides an additional income and employment to the farmers, especially in times of drought. It is an established fact that with the economic progress, consumption pattern shifts from cereal-based consumption pattern to protein based consumption patter, implying potentials for the growth the Sector. At present, this sector provides direct livelihood opportunities to about 29 lakh families in Telangana. The value of livestock produce is estimated to be Rs.25293 crore at constant prices and the livestock sector contribute is likely to be 5.9% to GVA in 2015-16.

Telangana is blessed with rich livestock resources, especially cattle and sheep population accounting for 5.52% of Country's population. As per the Livestock Census, 2012, Telangana stands 10th in livestock population, 2nd in sheep population, 13th in goat population, 4th in poultry, 13th in bovine population and 15th in pig population. The State produced 505 lakh MTs of meat, 1061 crore of eggs and 4207 lakh MTs of milk in 2014-15. Production of milk, eggs, meat during 2012-13 to 2015-16 (November) is given in Table below 3.12.

Table 3.12: Production of Milk, Eggs and Meat in Telangana

Item	Unit	2012-13	2013-14	2014-15	2015-16 (Up to Nov, 2015)
Milk	000' MTs	3951	3924	4207	2056
Eggs	Crore. Nos.	942	1006	1061	560
Meat	000' MTs	429	446	505	264

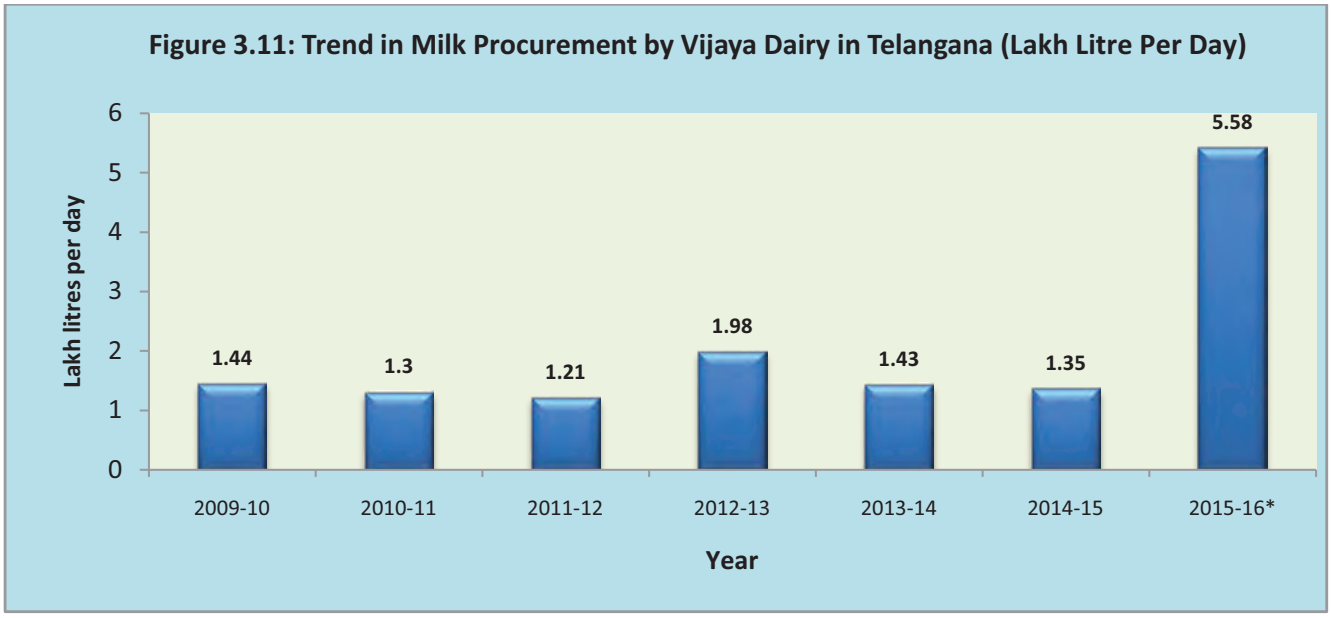
Major Schemes for Development of Animal Husbandry

(i) Cash Incentive to Dairy Farmers: Milch animal rearing is an important economic activity for about 22 lakh among small and marginal farmers in Telangana providing sustainable income especially in lean seasons. Due to increase in the cost of feed ingredients, reduced fodder sources, increase in labour cost etc., there is a high fluctuation in milk rate, making it an un-profitable economic activity.

Further, increase in the gap between demand and supply of milk, has become a chance to middle men involved in milk marketing to adopt malpractices such as adulteration of milk and also production of synthetic milk which are unsafe to human consumption.

With a view to encourage the farmers to produce more milk, the Government of Telangana has been providing a cash incentive of Rs.4 per litre of milk to dairy farmers supplying milk to the State Dairy Federation from 1.11.2014. All the milk producers who are supplying milk to the State Dairy Federation through village Milk Producers Co-operative societies (MPCS), Milk Producers Association Centres (MPAC) and Village Dairy Development committees (VDDC) are eligible for under the Scheme.

As a result, milk procurement by the Vijaya Diary increased from 1.18 lakh litres per day (before announcement of the Scheme) to 5.58 Lakh litres per day during the year 2015-16 (Figure 3.11).



Note: 2015-16 figures are upto Jan-2016.

Table 3.13 shows month wise milk procurement, amount spent towards cash incentive and number of farmers benefited with implementation of cash incentive scheme. In 2015-16 (up to end January, 2016) about 1,121.4 lakh litres milk is procured from farmers providing an incentive of Rs. 44.9 crore. It has benefited about 86,515 farmers in January, 2016 alone.

Table 3.13: Procurement of milk under 'Cash Incentive to Dairy farmers scheme' in 2015-16

Month	Quantity of Milk Procured (Lakh Litres)	Amount Paid to dairy farmers towards cash incentive (Rs. Crore)	Number of dairy farmers benefited
April, 2015	68.2	2.7	52,878
May, 2015	77.6	3.1	53,413
June, 2015	83.7	3.3	57,454
July, 2015	89.1	3.6	57,462
August, 2015	95.9	3.8	61,608
Sepember, 2015	125.8	5.0	73,649
October, 2015	159.0	6.4	80,842
November, 2015	147.4	5.9	83,233
December, 2015	136.5	5.5	87,752
January, 2016	138.1	5.5	86,515
Total	**1,121.4**	**44.9**	**-**

(ii) Power subsidy to Poultry Industry: Telangana State is the leading State in Poultry industry in the country. The State produces over 3.5 crore eggs per day (i.e. 25% of country's production) and 1/10th of countries broiler meat production. Keeping in view the crisis faced by the poultry sector, due to the abnormal increase in feed prices and steep fall in egg and broiler prices, Government is providing power subsidy to the poultry sector (layer farms, broiler farms, breeder farms, hatcheries, feed mills & egg powder plants) at Rs.2 per unit from 01.12.2014.

(iii) Animal Health Activities: The department has taken up strengthening of existing institutions to improve quality of Animal Health Services by providing facilities for surgery, disease investigation and treatment. Polyclinics were established at district headquarters to address this issue. Every Mandal has been provided with a veterinary graduate to effectively render Animal Health Services, support production program and for prevention and control of livestock diseases.

(iv) Feed and Fodder Development: High yielding and nutritious fodder is essential for scien-tific and economic management of livestock, particularly for cross breeds. It is aimed to popularize and propagate ,the high yielding fodder crops among the farmers on available arable and non-arable land, as scientific feeding of livestock is essential for increased productivity of milk and mutton. To intensify this activity, improved varieties of fodder seeds have been supplied to farmers with most encouraging results. 1482 MTs of fodder seed has been supplied during the year 2015 and 74100 acres of land is brought under fodder cultivation with the expected production of 2.99 Lakh MTs of superior quality dry fodder.

(v) Mass Sheep and Goat Deworming Programme:

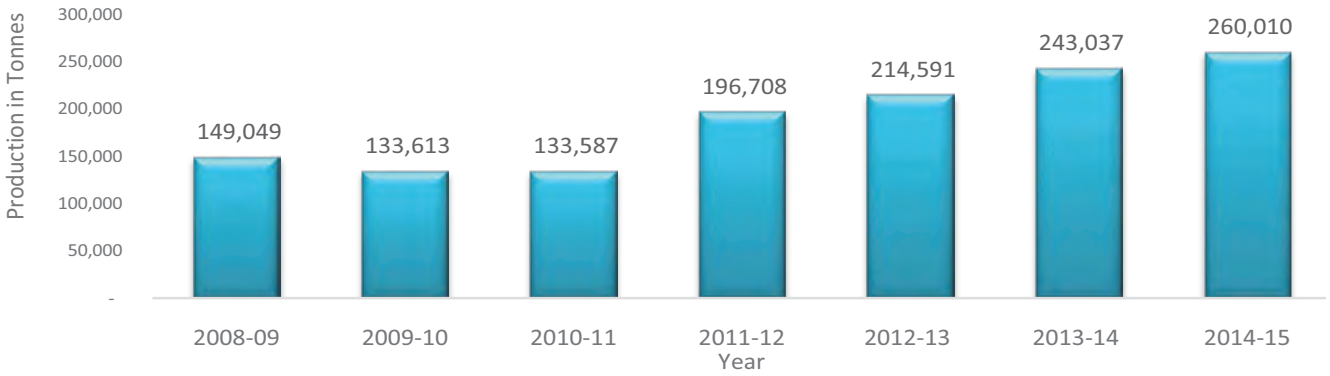
Sheep and Goat population in Telangana districts is about 175.50 lakh sheep and goat population and over 2.50 lakh families are benefited by rearing of sheep and goat. Extensive sheep and goat management is practised in the State. Trans-nomadic life style is being adopted by the shepherd community. Due to depleting feeding resources, sheep flock migrate from one place to another place in search of green fodder. Due to grazing habit on ground, parasitic worm load is one of the common problems in sheep management leading to poor growth and production loss. Worms generally lay eggs on grass blades and shrubs and are easily consumed by the Sheep during grazing. Such parasites are also responsible for transmission of diseases among the Sheep population leading to heavy mortality. Worm load is also responsible for lamb mortality at early age leading to heavy loss to Shepherd community. Three rounds of Mass Sheep and Goat Deworming Programmes are being planned for the year 2015-16 at free of cost covering entire sheep and goat population in the State in a campaign mode.

XIII. Fisheries

Fisheries is a traditional and important occupation in Telangana State apart from being an important source of food nutrient. Fisheries sector is contributing about 0.6 percent to the State GVA in 2015-16. The Government aims at (i) increase in fish production and productivity through increasing fishery base, (ii) achieve self- sufficiency in fish seed, (iii) supply of fish at an affordable price and in hygienic condition and (iv) improve the living condition of people depending on fisheries through welfare programs.

During 2015-16, up to November, 2015, 1.71 Lakh tonnes of fish and prawn is produced in Telangana as against target of 3.20 Lakh tonnes. The details of inland fish production for last seven years is given in Figure 3.12.

Figure 3.12: Trend in Inland Fish Production in Telangana



Source: Department of Fisheries, Government of Telangana

The resource base of fisheries in the State include 78 reservoirs spreading about 1.85 lakh hectares, and 35,031 tanks spreading over an area of 4.01 lakh hectares.

In order to encourage freshwater aquaculture in the State, the Government simplified the procedures for registration through the issuance of simplified guidelines. So far 474 ponds covering an area of 781 Ha has been issued with certificate of registration.

Major Schemes of the Government:

Strengthening of Fisheries Data Base and Networking: Under this scheme, the inland water bodies are being mapped by Central Inland Capture Fisheries Research Institute, Barrackpore with Remote Sensing Technology. This scheme is fully funded by the Government of India.

Group Accident Insurance Scheme (GAIS) for Fishermen: The premium under Group Accident Insurance Scheme for fishermen is Rs.20.27 per head which is shared equally by Central and State Governments at the rate of Rs.10.135 per fisherman. The Ex-gratia payable is Rs.2,00,000/- in case of death/permanent disability and Rs.1,00,000/- in case of partial disability and a cover of Rs. 10,000/- towards hospitalization expenses in the event of accident. The Government of Telangana is also paying Rs.1 lakh as ex-gratia to the dependents of the deceased fishermen in addition to the amount payable under GAIS. The lives of 3.07 lakh fishermen are insured for the year 2015-16.

Development of Fisheries: With an objective to improve productivity, reduce post harvest losses, increase livelihood support and welfare of fishermen in capturing and culturing of fisheries a comprehensive 'scheme for Fisheries Development' is being implemented. Infrastructure and beneficiary oriented programmes such as Construction of Community Halls for Inland fishermen (including SC/ST), Supply of Boats and nets to

reservoir, Assistance for Retail Fish Marketing, Establishment of fish/prawn farm or Fish Seed Farm or Fish Hatchery etc. undertaken as a part of this scheme.

Box 3.4 Cage culture in Telangana

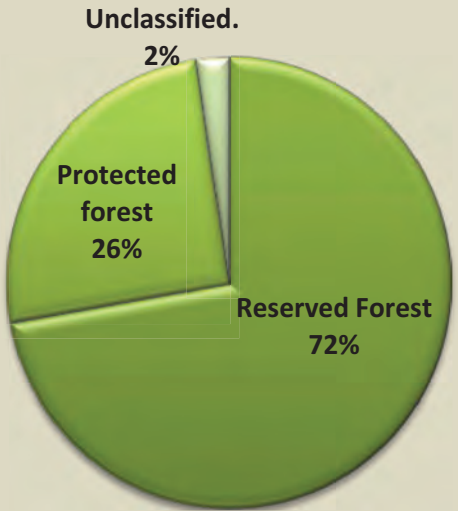
Cage culture is being looked upon as an opportunity to utilize existing reservoirs for greater production of fish in the State, besides increasing income of fishermen. At present in following reservoirs cage culture projects are being undertaken (i) Koilsagar, Mahabubnagar; (ii) Lower Manair Dam, Karimnagar; (iii) Kadam, Adilabad; (iv) Ashoksagar (Unit 1), Nizamabad; (v) Ashoksagar (Unit 2), Nizamabad, and (vi) Palair, Khammam.

The project was under taken with total outlay of Rs. 1.67 crore of which NFDB's subsidy is Rs. 67.04 Lakh (40%) and subsidy from Government of Telangana is Rs. 100.56 lakh (60%). The project aims to launch protein rich, fish based products for the domestic market at affordable prices along with providing employment to local fishermen.

XIV. Forestry

Forests play a major role in supporting livelihood activities of rural poor and tribals, mitigating the threat of global warming besides, conserving the fertile soil and vulnerable Wildlife. For the year 2015-16, forestry and logging contribution is 0.4 percent to State GVA and 3.3 percent to agriculture & allied sector's GVA. Forest area in Telangana is 27,292 sq. km. accounting for 24.35 percent of total geographical area. Out of 27,292 sq.km, Reserved Forest area is 19,696.23 sq. km, Protected forest forms 6953.47 sq. km and the rest 642.30 sq. km is unclassified (Figure 3.13).

Figure 3.13: Classification of Forest Area in Telangana



In terms of District wise forest cover, Adilabad has largest area under forest, followed by Khammam. However, in terms of percentage area under forest, Khammam stands first with 48.9 percent of total geographical area under forests, followed by Adilabad with 44.9 percent and Warangal with 28.88 percent (Table 3.14).

Table 3.14: District wise Geographical Area and Forest Area in Telangana State

Area in Sq.Km.

Sl. No.	Name of the District	Geographical Area	Forest Area	% of Forest Area to the Total Geographical Area
1	Adilabad	16,105	7,232	44.90
2	Karimnagar	11,823	2,545	21.52
3	Khammam	13,266	6,487	48.90
4	Mahabubnagar	18,432	3,033	16.45
5	Medak	9,699	906	9.34
6	Nalgonda	14,240	837	5.88
7	Nizamabad	7,956	1,812	22.78
8	Rangareddy & Hyderabad	7,710	731	9.48
9	Warangal	12,846	3,710	28.88
	Telangana State Total	**1,12,077**	**27,292**	**24.35**

National Forest Policy of India envisages a minimum of 33 percent of the total geographical area under forest/tree cover to maintain environmental stability and ecological balance; that are vital for sustenance of all life-forms including human, animal and plants. The role of forests as carbon sinks endows them added recognition as an important environmental factor. However, except in two districts, area under forest cover is less than desired 33 percent.

Telanganaku Haritha Haram

Telanganaku Haritha Haram, a flagship programme of the Government, envisages to increase the present 24% tree cover to 33% of the total geographical area of the State.

The thrust areas to achieve the above are two-fold; i) initiatives in notified forest area such as rejuvenating degraded forests, ensuring more effective protection of forests against smuggling, encroachment, fire, grazing etc., ii) major fillip is sought to be given to Social Forestry for achieving the second objective. In the areas outside the notified forest, massive planting activities will be taken up in areas such as; road-side avenues, river and canal bank, barren hill, tank bunds and foreshore areas, institutional premises, religious places, housing colonies, community lands, municipalities, industrial parks, etc. The Telanganaku Haritha Haram programme was launched on 3rd July, 2015.

230 Crore seedlings are proposed to be planted in the State during the next three years. Out of which, 130 crore seedlings are proposed to be planted outside the notified forest area (10 crore within HMDA limits, and the remaining 120 crore in rest of the State). It is also proposed to plant, and rejuvenate the viable rootstock to achieve 100 crore plants inside the forest areas by way of intensive protection of the forests.


The field functionaries of various line Departments have undertaken identification of sites for planting and prepared village Action Plans. The Village Action Plans will be consolidated at Mandal level and finally at the District level to form District Action Plan. At State level, two committees; the State Level Coordination and Monitoring Committee, and the State Level Steering Committee will oversee the progress of the Telanganaku Haritha Haram programme.

Revenue from Forest:

Forest products in the State include timber, bamboo, firewood and charcoal, beedi leaves and miscellaneous. The income accrued from forestry sector in the State is Rs.148.28 crore in 2013-14, Rs.82.08 crore in 2014-15 and Rs.71.33 Crore in 2015-16 (upto November 2015). Details of revenue realized from various forest produces is given in Table 3.15.

Table 3.15: Revenue realized from Forest Produce (Rs. crore)

Sl. No.	Item	2014-15	2015-16
1	Timber	15.94	9.64
2	Bamboo	5.30	3.92
3	Firewood & Charcoal	0.19	0.03
4	Other Forest Produce	0.04	0.02
5	Beedi Leaves	0.01	-
6	Teak Plants	1.75	-
7	Cashew Plants	0.07	-
8	Red Sanders	-	-
9	Other Plants	0.01	0.26
10	Thinnings	-	-
11	Miscellaneous	58.76	57.45
	Total	**82.08**	**71.33**

XV Outlook for Agriculture Sector

As substantial portion of rural population in the State depends on agriculture sector for their livelihood, it is imperative that we make farming viable and remunerative for those who depend on it. There are two daunting challenges that the sector faces: (i) unstable growth in agriculture sector, due to historical neglect of agriculture in the past and (ii) severe drought conditions in the State adversely affecting the agriculture sector. Any policy targeting to end poverty and inclusive growth has to pay more attention towards agriculture sector since population dependent on this sector is vulnerable to both internal and external shocks.

There exist several untapped potentials in agriculture sector. The major potentials for agriculture sector in Telangana are: i) Around 40 percent of its total geographical area of the State is under agriculture and soils of Telangana are suitable for cultivating a wide range of crops including food grains, oil seeds, pulses, fruit crops, etc. There is a scope for diversifying cropping pattern towards high value crops. ii) Telangana has a robust network of research institutions consisting of agricultural universities and institutions, which could play major role in developing technological solutions to bridge the productivity gap in major crops. Presence of national and international institutions engaged in agricultural research such as International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) and number of other ICAR institutes is an added advantage. iii) Climatic condition of the state is appropriate for the growth of seed industry in the State. The State has already made a dent in seed production in the country as lion's share of seeds requirement in the country are supplied from the State.

As discussed in previous sections, Government of Telangana recognized the importance of improving the conditions of agriculture for uplifting the living standards of its people in general and farmers in particular. Structural problems associated with agriculture are being addressed through different schemes/programmes. Apart from implementing normal state plan schemes funded exclusively from the State funds, Telangana Government is making use of almost all the Centrally Sponsored Schemes in the Sector. Some of the Centrally Sponsored Schemes are suitably linked to State Schemes for more coordinated efforts. Whereas Government has prepared an action plan for mitigating adverse impact of drought, such as, provision of input subsidy, sector specific action plan for agricultural crops, horticulture, animal husbandry and fisheries, are also under implementation.

Horticulture crop in Mahabubnagar District