Groundnut Production and Adoption of Technology by Women Farmers in Andhra Pradesh- Relatedto Rayalaseema Region

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ABSTRACT--- Restoringgroundnut creation in the province of Andhra Pradesh requires purposefulactivity by the partners. Ancestral ranchers in Andhra Pradesh, India, have out of the bluedeveloped groundnut on their territories, prompting enhanced livelihoods through usage ofinnovation. A few groundnut generation advancements have been produced and conveyed through the augmentation administration to the ranchers. On the other hand, there has been adecrease underway and cooperation by the lady agriculturists. Hence the lady agriculturists remainto a great extent uneducated and asset poor. To scale up generation and exploit the moderncapability of this yield an examination was directed to record the financial, statistic and institutional factors of lady ranchers, distinguish innovation data bundlesconveyed to the ranchers and reception of these advances. Absolutely 200 agriculturists weremet. The respondents were sourced utilizing multistage inspecting technique. The information gathered in the examination were outlined in tables.

Keywords---Agriculture, Groundnut

INTRODUCTION:

Groundnut (Arachis hypogea) started in the landmass of Southern parts ofAmerica. However, it ispresently broadly developed all through the tropical, sub-tropical and calm nations in Africa,Asia, North and South America. The ideal mean every day temperature helpful for gooddevelopment of the harvest is 30 o C and development stopsat15 degree centigrade and cool temperatures defer blossomingof the yield. Between 500-600 mm of water sensibly conveyed all through the developingseason takes into consideration a decent product. Groundnut develops well on sandy – loamy soil, with a pH extendof 5-7; and the dirt ought to be wealthy in the minerals like calcium and phosphorus which are basicfor case arrangement. Groundnut can be a sole harvest or intercropped. It develops better as sole yield. Constraints in the generation of groundnuts change from work, arrive accessibility, subsidizing, accessibility of suitable manure , illness control, post-gather difficulties, the appropriate capacityof advertising. The innate ranchers in the territory of Andhra Pradesh, India, have out of the blue developed groundnuts on their territories, prompting enhanced wages among them.With specialized information sources and preparing under the RythuKosam Project of the Government ofAndhra Pradesh, the cultivators have effectively created establishment seeds from thereproducer seeds of enhanced groundnut assortments given by ICRISAT.

OBJECTIVES:

1. The study area covered women farmers registered within the state of Andhra Pradesh.
2. To suggest appropriate strategies for the improvement in groundnut production in the district of Rayalaseema of the state of Andhra Pradesh.

Demographic Features

Table 1.1: Population (Males and Females) and Sex Ratio in Rayalaseema districts of Andhra Pradesh 2011

District	# of females	# of males	Sex Ratio
Ananthapur	1859588	1780890	3640478958
Chittoor	1889690	1856185	3745875982
Cuddapah	1318093	1283703	2601797974
Kurnool	1796214	1733280	3529494965
Rayalaseema	6863585	6654059	13517644970

Source : The Directorate of Census Operations, Andhra Pradesh, Census of India, 2011

The total population of the Rayalaseema region according to 2011 census was 11.66 million accounting for 17.57% of the total population of the state (66.35 millions); and according to2011 census estimates from the Table 1.1, it was 13.52 million amounting to 17.74% against `the state's total population of 76.21 million. The sex ratio is defined as the number of females per 1000 males. The figures of 2011 census revealed that there was a sex ratio of 970 against the state ratio of 978 with 6.86 million males and 6.66 million females in this region.

Table 1.2: Area irrigated by different sources in Rayalaseema districts of AndhraPradesh during 2011-2015. (Area in hectares)

Districts	Gross Area	Area Irrigated more than once	Netarea
Ananthapur	2324994075071	1169611911121	4729604141751

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Chittoor	451687871737	378512412653	537340163874
Kadapa	215531462933 9	264251241124 12	407332952157 02
Kurnool	387699385749 5	319338459171 70	132161203862
Rayalaseema	108723292182 976	598790410915 534	455132075666 51
Andhra Pradesh	134597947710 0125450	649135153875 3880	590110612849 86718

Irrigated Canals , Tanks ,Tube wells and other sources

Directorate of the Economics and Statistics, Government of the Andhra Pradesh.

Table: 1.3 Area , Production and Productivity of the groundnut in Andhra Pradesh & Results

Year	Area Production (tons)	Yield per hectares (kgs)
2009-2010	2198324	20,44,971930
2010-2011	1834032	11,55,930630
2011-2012	1991919	21550671681
2012-2013	17,95,117	21,42,953606
2013-2014	18733817	12,50,2331143
2014-2015	1469624	163924739

Source :Directorate of the Economics and Statistics, India, Various issues.

The area of production and productivity of the groundnut crop in Andhra Pradesh during the period 2010-2011 to 2012-2013 is presented in table 1.3. The area under groundnut crop in the state of Andhra Pradesh fluctuated between 21, 98,324 hectares in 2011-2012 and 14, 69,624 hectares in 2012-2013. It is observed that the area under the groundnut crop declined inAndhra Pradesh from 21, 98,324 hectares to 14, 69,624 hectares during 2011-2012 to 2012-2013. The reason for this declining trend in area under the groundnut crop was mainly inadequate and uneven rainfall in the Rayalaseema region and the change of cropping pattern inrecent years in irrigated as well as non-irrigated areas all over the state. Area, Production and Yield of the Groundnut Crop in Andhra Pradesh during 2011-2013.

But during the next three years, the area under the groundnut crop increased from 14, 93,259 hectares in 2013-2014 to 18, 75,544 hectares in 2015-2016. In 3 of the 10 years investigated the production of groundnut varied from 7, 42,637 tons to 26, 02,847 tons. Area and Production of Groundnut Crop in the Anantapur District can be observed from the table 1.4 that the area of production of groundnut in the Anantapur district is showing a steady growth with increasing trends. However, the average yield per hectare has fluctuated during the period under study. The total area under groundnut production increased from 7, 59,419 hectares in 2009-2010 to 8, 99,035 hectares in 2015-2016recording an increase of 18.38%. Correspondingly,production has decreased from 5, 55,251tons in 2015-2016 to 3, 9,965 tons in 2015-2016 showing a decrease of 29% and again declined to 1,00,012 tones. The production was increased from 9, 03,614 tons in 2009-2010 recording an increase of 62.74 % and also production increased to 9, 08,795 tons in 2009-2015 recording increase of 63.67% and again it hiked to 11,30,126 tons in 2016-2017.

Table: 1.4 Area, Production and Yield of theGroundnut Crop in Andhra Pradesh during2011-2013.

Year	Area Production (tons)	Yield per hectares (kgs)
2009-2010	759419	555251731
2010-2011	671047	250175372
2011-2012	781179	9036141156
2012-2013	716650	274851116
2013-2014	814607	908795383
2014-2015	777437	363020467
2015-2016	749792	278604809

Source: Directorate of the Economics and Statistics, India, Various issues.

District Level Analysis of production of principal food crops and non-food crops in theRayalaseema region

The output of the analysis indicating the crop-wise distribution of production and productivity cultivated area across the major growing districts are presented below:

PULSES AND OILSEEDS:

The crop of Bengal gram is making inroads into the rabi rice areas and is mainly seen in

Medak, Prakasam and Rayalaseema districts of the state. Depletion of water availability during the rabi season is one of the reasons for such a shift from rice to other crops. The crop of Black gram, as a catch or relay crop in between kharif–rabi rice crops, is popular in coastal districts, whereas greengram is distributed in both the coastal and Telangana regions and about 83% of red gram area is confined to 10 districts of the state. The oilseed crops are concentrated in the rain-fed districts of Rayalaseema and Mahabubnagar, which account for over 80% of the state's area under such crops.

COMMERCIAL CROPS:

Cotton, the major commercial crop of Andhra Pradesh, is mainly in Telangana, and the Guntur, Krishna and Kurnool districts of Andhra Pradesh. Chilies are concentrated in the nine districts of the state, while sugarcane is concentrated in five districts.

LAND UTILIZATION PARTICULARS:

The state is conventionally split into two geographical regions, one being coastal Andhra and the other being Rayalaseema. The latter region covers an expanse of 67,298 square Kms (42 % of the state's land area). It comprises 4 districts namely Anantapur, Chittoor, Kadapa and Kurnool .Land use classifications indicate the systematic arrangement of land based on certain related characteristics, mainly to identify and understand their basic utilities effectively and intelligently. The land use pattern indicates the spatial-temporal sequence of fields under different crops.

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It also shows that the net accessible land for development, which is a noteworthy factor .The grouping and significant classifications of land use designs are as per the following:

1. Backwoods Land
2. Fruitless & Uncultivable Land
3. Land put to non-horticultural employments
4. Cultivable waste Land
5. Lasting fields & other eating Land
6. Land under various tree crops & forests not 'incorporated into the net sown'
7. Current decrepit Land
8. Other decrepit Land
9. Net region sown
10. Complete edited territory
11. Region sown more than once
12. Land under Fish & Prawn culture. .

LAND USAGE DESIGNS IN THE RAYALASEEMA DISTRICT:

The territory around 4484200 hectares of the all out, thegeological zone of Rayalaseema locale was under woods 1108968 hectares in the year 2013-2014. There is change in photographic, soil types, precipitation and geography, every one of these variables had vital influence in settinghorticultural practices. The classifications incorporate any land named a woods legitimate authorization. Assessments of yield reaction in groundnut in Rayalaseema locale of the Andhra Pradesh.

GROUNDNUT YIELD –

ClimateConnections:- The kharif period of groundnut starts in the long stretch of July and keeps going till November in Chittoor. In this way, the climate factors considered for the connections wereconstrained to these five months. The yearly kharif groundnut yield information spoke to graphically(Figure3) showed a quantum hop inyields amid the year 1964-65. This was additionally affirmed fromthe general normal (Y) which unmistakably isolates the whole yield information (i.e., 2001 t0 2011) into thefollowing-

Sub-periods: Sub-Period I (8 years) 2001 t0 2008 This quantum hop after2001 t0 2010 - might have been because of yield expanding mechanical elements like better administration of the land, water system and compost. The distinctive yield levels and furthermore the yield inconstancy in the two sub-time frames prompts enquire the likelihood of a differential climate reaction. Product yield-climate connections became as normal by applying stepwise relapse method. Means and individual standard deviations of regressor factors screened into the conditions are recorded. The different relapse conditions relating to the discrete time impact model of paddy yield are introduced in table 20. Regressors screened into condition of sub-period I are (AM) humidity of September and November, (both adversely related). The phases of product development amid September and November are the conceptive stage and the maturing stage individually. Increment in September (morning) mugginess suggests soggy climate conditions. Such an expansion may not be gainful for the harvest since it unfavorably influences anthesis (dust shed) and fertilization bringing about poor seed set. Increment in (AM) dampness amid aging the stage (November) causes an impressive decrease in the compelling number of spikelets and in this manner decreasing the yields definitely (IRRI Annual Report,2013). Actually, brilliant daylight and generally higher temperature is the prerequisite for paddy amid the maturing arrange (IRRI Annual Report,2015). The significant groundnut creating nations on the planet are India, China, Nigeria, Senegal, Sudan, Burma and the United States of America. Out of the absolute region of 18.9 million hectares and thecomplete creation of 17.8 million tons on the planet, these nations represent about 69% of the regionunder development and 70% of the creation. India has the primary spot, both with respect to the territory andthe generation on the planet. About 7.5 million hectares are put under it yearly and the creation isaround six million tons. A sum of 70% of the region and 75% of the generation has been gathered in the four conditions of Andhra Pradesh, Gujarat, Karnataka, and Tamil Nadu. Andhra Pradesh, Karnataka, Orissa and Tamil Nadu have watered regions fundamentally amid the rabi season. Watered zones frameabout 6% of the groundnut region in India. In these states, groundnut generation principally relies upon precipitation. Evaluated value versatilities of supply reaction capacities for groundnut in Rayalaseema areasof Andhra Pradesh in various seasons (2003-2015) Groundnut is the most critical oilseed trim in India. The agriculturists are fundamentally relies upon groundnut development in the dry spell inclined locale of Anantapur. Because of absence of water system offices andpoor option editing design in rain sustained zones like Anantapur and in different regions of Rayalaseema, the ranchers have been developing groundnut trim from the most recent quite a few years. The yield per hectare was high in Tamil Nadu pursued by the Rajasthan. InAndhra Pradesh, the yearly normal generation of groundnut amid the decade under investigation was 1464992.50 tons and the yearly normal yield per hectare was 796.50 kgs. The region and generation of groundnut was high in the regions of Rayalaseema contrasted with different districts of the state. The yearly normal offer of groundnut region to the absolute oil seeds zone of Andhra Pradesh was 64.64% per annum.The yearly normal commitment of oilseeds territory to the all out edited region of Andhra Pradesh was 28.05 per hectare and the offer of groundnut zone to the all out edited territory and oil seeds region amid2002-2006 was 17.30% and 61.68% individually. The generation of groundnut in Andhra Pradesh was 13,64,817 tons and its offer in complete oilseeds generation was 66.89%. In Anantapur region of Rayalaseema locale of Andhra Pradesh, the yearly normal generation of groundnut trim a mid 1996-97 to 2005-2006 was 46,53,02 tons and the yearly normal yield per hectare amid the equivalent period was 604.40 kgs. Contrasted with the waterfront regions, the yield per hectare is low in Anantapur area because of uneven precipitation, less focus on manure , poor financial states of the ranchers, lacking monetary assets, poor

innovation and poor farming expansion exercises in the region. By satisfying the above elements, the efficiency per hectare might be expanded in the Anantapur region in the future. Cost Increase in Summer in India . The Indian market action has been low in January and February, subsequently somewhat lessening costs. The legislature of the northern Indian territory of Gujarat has acquired 800,000 tons of in-shell item since November 2017 and it is normal that the national government made extra buys in light of the fact that the costs are still underneath the base help levels. The fares are low, not exclusively to Europe, yet in addition to China, because of African challenge, yet additionally to Russia and Algeria, in light of the fact that these two are purchasing numerous Bold Brazilian item, stagnating Indian costs. Far eastern markets, for example, Indonesia and Malaysia are still keen on the Java assortment, particularly greater sizes, since its travel time is much lower than the African inceptions. Thisassortment is the most stretched out in Southern India, where the supply is functioning admirably and it will "proceedfor the following 45 days," as pointed out in the investigation. Then again, the province of Gujarat has waterconfinements and is expecting a lower summer yield of Bold item. In the event that this gauge progresses toward becoming reality,the Java cost could go up, particularly around the Ramadan celebration (May-June 2018). The development rate of region under groundnut in India was in negative pattern in five out of ten years under examination. In Andhra Pradesh the development rate was negative in four out of ten years under reference while in Anantapuram locale the development rate of region under the groundnut amid 2001-2002 to 2005-2006 was negative in four out of ten years under study. The explanation behind this might be because of low precipitation under reference at national dimension to area level. The efficiency of groundnut in India fluctuated between 1,355 kgs in 2003-2004 and 694 kilograms in 2004-2005. As to the territory of Andhra Pradesh ,the yield per hectare vacillated between 1,091 kilograms in 2000-2001 and 558 kilograms for each hectare in 2002-03. In Anantapuram region the yield per hectare was high (1,156 kgs for each hectare), in 2002-03 and low in 2003-2004 and 2004-2005 (302 kilograms for each hectare). Near Statement of Groundnut Production . The table 1.5 demonstrates the near examination of groundnut generation in Andhra Pradesh andin Anantapuram locale amid 2005-2006 to 2015-2016. The generation of groundnut in Andhra Pradesh was 21, 55,067 tons in 2005-2006 (most noteworthy generation amid the decade) and 8, 20,654 tons (low creation) in 2015-2016 though in Anantapuram region the generation of groundnut was high amid 2004-05 (9, 08,795) and low amid 2014-2015 (2, 07,681 tons). The offer of groundnut creation in Anantapuram region to the complete groundnut generation of Andhra Pradesh differed from 21.07% in 2003-04 to 43.06% amid 2014-2015.

Seasons/Districts Area Response Production Response Yield Response

Appraisals of zone reaction of groundnut in Rayalaseema locale of Andhra Pradesh The real groundnut delivering nations on the planet are India, China, Nigeria, Senegal, Sudan, Burma and the United States of America. Out of the all out territory of 18.9 million hectares and theall outcreation of 17.8 million tons on the planet, these nations represent about 69% of the territoryunderdevelopment and 70% of the generation of the product. India involves the primary spot, both in respectto the territory and the creation on the planet. About 7.5 million hectares are put under it yearly and the creation is around six million tons. About 70% of the zone and 75% of the generation has beenpacked in the four conditions of Gujarat, Andhra Pradesh, Tamil Nadu and Karnataka. Andhra Pradesh, Karnataka, Tamil Nadu and Orissa have watered regions fundamentally amid the rabi season. Thewatered regions represent about 6% of the groundnut zone in India. In these states, the groundnut generation fundamentally relies upon precipitation.

Increment in efficiency:- The generation of all sustenance grains together went up by 151%, for the most part driven by a 137% development in efficiency and a little development of 6% in the zone- B. Rayalaseema presents the adjustments in the territory, creation and efficiency of vital sustenance grain trims in Rayalaseema between 2005-08 and 2010-13. As a rule, the Rayalaseema locale moved far from the creation of nourishment grain trims over a time of four and a half decades. The zone under rice development barely went up by 5% and since the efficiency went up by 110%, its creation expanded by 120%. In spite of the fact that the development in the zone of maize was just by 69%, the creation went up by 665% because of the solid impact of profitability development by 353%. Jowar, which was the most essential yield in this locale when the state was shaped, lost as much as 77% of the zone in the base time frame. But since 120% expansion in efficiency, the decrease in its generation was limited to just half. The ragi trim additionally lost the region vigorously by 85% however the decrease underway was limited to 77% as a result of a 51% expansion in profitability. The steed gram trim endured the heaviest disintegration in territory by 93%. Be that as it may, even for this situation, the profitability expanded by 84% and, thus, the decrease underway was restricted to 88%. Excepting horse gram, which lost 136 thousand hectares in zone, all other heartbeat yields, for example, Bengal gram, dark gramfurthermore, red gram picked up in the two territories of harvest and profitability, causing huge jumps underway. The territoryunder Bengal gram edit went up by 653%. Its creation went up more than eleven–overlap, helped by a 49% development in efficiency. Since the zone under dark gram went up by 300%, its creation jumped by 570%, likewise helped by a profitability development of 68%. The region under the red gram developmentexpanded by 64% yet its creation demonstrated an expansion of 71% because of a little increment of 5% in itsprofitability. Regardless of a minor fall in the zone under green gram by 4%, its generation increasedby 150%, driven by a 160% expansion in its profitability. All the sustenance grain trims together lost 64% of the region in the base time frame, however in spite of

this, the nourishment grain generation in the Rayalaseema area felljust possibly by 0.6% because of a solid development in profitability by 174 %.

PRODUCT SHIFTS AFTER THE RE-ORGANIZATION OF THE COASTAL ANDHRA DISTRICTS

Among the oilseed crops, groundnut picked up 10 % of the territory , however its generation expanded by just 3% because of a 6% decrease in efficiency. Theall out zone under oilseeds dropped by 6%, however,the examinations of creation and efficiency couldnot be endeavored due to non-accessibility of information in the base time frame. By and large, the expansion in the grosstrimmed region was by 15 %, however,this expansion was more for non-sustenance crops (22 %) than for nourishment crops(11 %).the regions of Kadapa and Kurnool of Rayalaseema locale, Andhra Pradesh as it were.

BRIEF OF RAYALASEEMA - PERFORMANCE OF CROPS

Rāyalaseema is a geographic area in the Indian province of Andhra Pradesh. It includes four locale of the state to be specific, Anantapur, Chittoor, Kadapa and Kurnool. Starting at 2011 registration of India, the locale with four areas had a populace of 15,184,908 and spreads a region of 67,526 km 2 (26,072 sq mi). Of the absolute land zone, (6.72 million hectares), of the Rayalaseema district, just 39.8% (2.67 million hectares) is the net territory sown (counting and prawn culture) under various harvests. As it were 4% of the absolute geological region (0.26 million hectares) is sown more than once. In this area in the state developing nourishment crops like paddy, jowar business crops like sugarcane, cotton, and oil seed crops like groundnut and sunflower. The interest for these products is expanding everyday. All these crops are developed in both kharif and rabi seasons. Amid the arrangement time frames the development of these products areexpanding because of the selection of green unrest. The absolute region under yields in Rayalaseema amid2014-15 is 28.54 lakh hectares whereas it is 67.39 lakh hectares in the year 2013-14.

GROUNDNUT

Groundnut is for the most part developed under rain-bolstered conditions. The zone developed under this harvest is 8.32 lakh hectares in 2014-15, as against 11.10 lakh hectare in 2013-14, which demonstrates a decline of 27.8%. The creation of Groundnut was 83.23 lakh tons amid 2014-15 as against 7.39 lakh tons in 2013-14, possibly an expansion of 3.90% because of a decline in the zone and efficiency in the year 2014-15. The normal yield rate of Groundnut was 470 kgs/hectare in 2014-15 as against 660 kgs for every hectare in 2013-14 uncovering an expansion of 26.8%.

RESULTS & DISCUSSION:

The socio – economies qualities of the respondents considered in the investigation are age, conjugal status, family measure, instructive dimension, essential occupation, cultivate estimate, long stretches of involvement in cultivating groundnut, arrive residency status, wellspring of data, wellspring of enhanced groundnut generation innovations, the visit of expansion staff and appropriation of enhanced groundnut creation advances. About 38% of the respondents are between the age sections of 40-49 years pursued by those between 30-39 tears (34%) and 20% of the respondents had their ages between 20-29 years, while (80%) recorded 50 years or more. Vast extents of the agriculturists are youthful and are expected to be physically capable and rationally more open to adapt new advancements than more seasoned agriculturists.

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