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AN ANALYSIS OF THE IMPACT OF AGRICULTURAL CREDIT ON AGRICULTURAL DEVELOPMENT AND CROP PRODUCTION IN ANANTHAPURAMU DISTRICT OF ANDHRA PRADESH

Dr. G RAMA LINGAPPA
ICSSR Senior Research Fellow
Department of Rural Development
Sri Krishnadevaraya University, Ananthapuramu, Andhra Pradesh, INDIA
ORCID ID: 0009-0009-1022-3244.

Abstract: The present study examines the impact of agricultural credit on agricultural development and crop production in Ananthapuramu District of Andhra Pradesh. Agriculture plays a vital role in the socio-economic development of the district, where a majority of the rural population depends on farming and allied activities for livelihood. However, the district frequently experiences drought conditions, inadequate rainfall, and limited irrigation facilities, which adversely affect agricultural productivity. In this context, agricultural credit serves as an essential mechanism for improving farm investment, adoption of modern agricultural practices, and crop productivity.

The study is based on secondary data collected from government reports, agricultural statistics, banking records, and published literature. The analysis focuses on the relationship between institutional agricultural credit and agricultural development indicators such as crop yield, irrigation expansion, technology adoption, and farmer income. The findings reveal that institutional credit positively influences agricultural productivity and encourages farmers to adopt improved farming methods. However, inadequate credit accessibility, delayed loan disbursement, high dependency on informal lenders, and climatic uncertainties remain major challenges.

The study concludes that strengthening institutional agricultural finance, expanding irrigation infrastructure, promoting drought-resistant crops, and improving rural banking accessibility are essential for sustainable agricultural development in Ananthapuramu District.

Index Terms: – Agricultural Credit, Agricultural Development, Crop Production, Farmer Income, Irrigation, Drought, Rural Development, Institutional Finance, Crop Productivity, Ananthapuramu District.

I . INTRODUCTION

Agriculture is one of the most important sectors of the Indian economy and plays a crucial role in the socio-economic development of the country. A large proportion of India's population depends directly or indirectly on agriculture and allied activities for employment and livelihood. The agricultural sector not only ensures food security but also supplies raw materials to various industries and contributes significantly to national income. Rural development in India is closely associated with agricultural growth, as the majority of rural households rely on farming for their economic survival. In this context, agricultural development

becomes essential for improving rural livelihoods, reducing poverty, generating employment opportunities, and maintaining economic stability.

Agricultural development largely depends upon the availability of adequate financial resources. Farmers require financial assistance for purchasing seeds, fertilizers, pesticides, farm machinery, irrigation equipment, and other agricultural inputs. Agricultural credit acts as an important instrument that enables farmers to adopt modern agricultural technologies, increase farm productivity, and manage agricultural risks. Institutional agricultural finance provided through commercial banks, cooperative societies, regional rural banks, and government agencies has become a major support system for agricultural growth in India. Timely and adequate credit helps farmers improve crop production, adopt scientific farming methods, and enhance their income levels.

Despite various government initiatives and rural credit schemes, many farmers in India continue to face financial difficulties. Small and marginal farmers often depend on informal sources such as private money lenders due to inadequate institutional credit availability, delayed loan disbursement, lack of collateral security, and complicated banking procedures. High rates of interest charged by informal lenders frequently increase the debt burden on farmers. In drought-prone regions, crop failures and unstable agricultural income further intensify rural indebtedness and economic insecurity among farming households.

Ananthapuramu District of Andhra Pradesh is one of the most drought-affected regions in India. The district lies in the semi-arid zone and experiences low and erratic rainfall, poor groundwater availability, and frequent drought conditions. Agriculture in the district is predominantly rainfed, making farming highly vulnerable to climatic fluctuations. Groundnut is the principal crop cultivated in the district and occupies a major share of the cropped area. However, recurring droughts, low soil moisture, inadequate irrigation facilities, pest attacks, and fluctuating market prices adversely affect crop productivity and farmer income. As a result, farmers often experience financial stress and increasing indebtedness.

In such circumstances, agricultural credit becomes highly significant for sustaining agricultural activities and supporting rural livelihoods. Credit facilities enable farmers to purchase agricultural inputs, invest in irrigation facilities, adopt improved farming technologies, and continue cultivation even during adverse climatic conditions. Access to institutional finance also reduces dependence on private money lenders and helps farmers improve their socio-economic conditions. In recent years, several government initiatives such as crop insurance schemes, subsidized agricultural loans, watershed development programs, and micro-irrigation projects have contributed to improving agricultural conditions in the district. Nevertheless, challenges related to credit accessibility, irrigation scarcity, and crop failures continue to affect agricultural sustainability.

The present study attempts to analyze the impact of agricultural credit on agricultural development and crop production in Ananthapuramu District. The study examines the availability and utilization of agricultural credit among farmers and evaluates its role in improving agricultural productivity and farmer income. It also analyzes the major factors responsible for farmer indebtedness and low crop productivity in the district. Further, the study highlights the importance of irrigation development, crop diversification, and institutional financial support for achieving sustainable agricultural growth. The findings of the study are expected to provide useful insights for policymakers, financial institutions, agricultural planners, and rural development agencies in designing effective strategies for improving agricultural development and farmer welfare in drought-prone regions like Ananthapuramu District.

II . REVIEW OF LITERATURE

Review of literature plays an important role in understanding the existing research related to agricultural credit, agricultural development, and crop productivity. Several researchers have examined the relationship between institutional finance and agricultural growth in rural India. The following studies provide valuable insights into the significance of agricultural credit and its impact on farmers and agricultural productivity.

T. U. Himabindu (2015) studied the role of agricultural credit in rural development and observed that timely institutional credit helps farmers adopt modern agricultural technologies, improve irrigation facilities, and increase crop productivity. The study emphasized that access to credit enhances the economic conditions of rural households and reduces dependence on traditional farming methods.

M. V. Nadkarni (2017) explained that agricultural finance is an essential component of agricultural development. The study highlighted that institutional credit enables farmers to purchase quality seeds, fertilizers, pesticides, and agricultural machinery, which ultimately contributes to higher agricultural yields and improved farm income. The author further noted that inadequate access to finance remains one of the major obstacles to rural development in drought-prone areas.

R. Radhakrishna (2018) analyzed the relationship between rural credit and agricultural productivity in India. The study found that farmers with better access to institutional finance achieved higher productivity levels compared to those depending on informal sources of credit. The research also emphasized that agricultural credit reduces the exploitation of farmers by private money lenders charging high rates of interest.

K. Venkata Reddy (2020) examined the impact of agricultural credit in drought-prone regions of Andhra Pradesh, particularly in Ananthapuramu District. The study concluded that institutional agricultural credit helps farmers manage production risks, sustain cultivation during adverse climatic conditions, and adopt improved agricultural practices. However, the study also reported that delays in loan disbursement and insufficient credit availability continue to affect small and marginal farmers.

P. Sainath (2019) observed that increasing farmer indebtedness in dryland regions is largely associated with crop failures, fluctuating market prices, and inadequate irrigation facilities. The study pointed out that dependence on private money lenders often worsens the financial condition of farmers and leads to long-term debt burdens.

According to NABARD reports, institutional agricultural finance has expanded significantly in recent years through commercial banks, cooperative societies, and regional rural banks. The reports emphasize that agricultural credit plays a crucial role in improving crop production, promoting mechanization, and supporting rural livelihoods. However, disparities in credit accessibility still exist between large farmers and small or marginal farmers.

Studies related to crop productivity in Ananthapuramu District reveal that low rainfall, moisture stress, poor soil fertility, and dependence on rainfed agriculture continue to affect agricultural performance. Researchers have suggested that watershed development, micro-irrigation systems, crop diversification, and adoption of drought-resistant crop varieties can improve agricultural sustainability in the district.

The review of literature indicates that agricultural credit has a positive influence on agricultural development and crop productivity. Most studies conclude that institutional finance supports modernization of agriculture, increases farmer income, and reduces rural poverty. However, issues such as inadequate credit accessibility, delayed loan disbursement, high cultivation costs, and climatic uncertainties continue to pose serious challenges to sustainable agricultural development, particularly in drought-prone regions like Ananthapuramu District.

III. OBJECTIVES OF THE STUDY

1. To analyze the availability and utilization of agricultural credit among farmers in Ananthapuramu district.
2. To examine the impact of agricultural credit on agricultural development and crop production.
3. To identify the problems faced by farmers in accessing agricultural credit and suggest suitable measures for improvement.

IV. HYPOTHESES OF THE STUDY

1. Agricultural credit has a significant positive impact on agricultural development and crop production in Ananthapuramu District.
2. Adequate and timely agricultural credit improves farmers' adoption of modern agricultural practices and increases crop productivity.

V. RESEARCH METHODOLOGY

The present study is analytical and descriptive in nature. It aims to examine the impact of agricultural credit on agricultural development and crop production in Ananthapuramu District of Andhra Pradesh. The study focuses on understanding the role of institutional agricultural finance in improving agricultural productivity, farmer income, and rural livelihoods in the drought-prone region.

Sources of Data

The study is based on both primary and secondary data.

Primary Data

Primary data were collected directly from farmers through:

- Structured questionnaires
- Personal interviews
- Field-level interactions

The information collected included:

- Availability of agricultural credit
- Utilization of crop loans
- Crop production details
- Income levels
- Indebtedness
- Farming practices

Secondary Data

Secondary data were collected from:

- Hand Book of Statistics, Ananthapuramu District
- Government of Andhra Pradesh reports
- NABARD publications
- Reserve Bank of India reports
- Agricultural department records
- Research journals, books, and published articles

Study Area

The study was conducted in Ananthapuramu District of Andhra Pradesh. The district is one of the drought-prone regions in India and is characterized by:

- Low and erratic rainfall
- Semi-arid climatic conditions
- Rainfed agriculture
- Limited irrigation facilities

Groundnut is the principal crop cultivated in the district, along with pulses, millets, and horticultural crops.

Sampling Technique

A simple random sampling method was adopted for selecting the respondents. Farmers from different villages of Ananthapuramu District were included in the study to obtain representative information regarding agricultural credit and agricultural productivity.

Sample Size

The study covered 300 sample farmers belonging to different landholding categories such as:

- Marginal farmers
- Small farmers
- Medium farmers
- Large farmers

The inclusion of different categories of farmers helped in obtaining balanced and comprehensive information regarding credit utilization and crop production.

Variables of the Study

The major variables considered in the study include:

- Agricultural credit availability
- Crop loans and term loans
- Crop productivity
- Farmer income
- Cost of cultivation
- Irrigation facilities
- Farmer indebtedness
- Sources of livelihood

Tools and Techniques Used for Analysis

The collected data were analyzed using suitable statistical tools and techniques such as:

- Percentages
- Averages
- Tabular analysis
- Comparative analysis
- Correlation analysis

Tables and charts were also used for systematic presentation and interpretation of data.

Period of the Study

The study mainly focused on agricultural conditions, crop productivity, and agricultural credit disbursement during recent years, particularly with reference to the agricultural year 2017–18.

Scope of the Study

The study examines the relationship between agricultural credit and agricultural development in Ananthapuramu District. It evaluates the extent to which institutional credit contributes to:

- Improved crop production
- Adoption of modern agricultural practices
- Farmer income enhancement
- Reduction in agricultural risk and indebtedness

The study also identifies major problems faced by farmers in accessing agricultural credit and suggests suitable measures for improving agricultural sustainability in the district.

VI. ANALYSIS AND RESULTS

Agricultural Credit Disbursement in Ananthapuramu District

Agricultural credit plays an important role in supporting agricultural activities and improving crop production in Ananthapuramu District. The disbursement of agricultural credit during 2017–18 indicates that a major share of institutional finance was provided in the form of crop loans. Against the total agricultural credit target of Rs. 8748.09 crore, the achievement stood at Rs. 7819.15 crore, accounting for nearly 89.4 percent achievement. Most of the loans were disbursed as crop loan renewals rather than fresh loans, indicating that institutional finance was largely utilized for maintaining existing cultivation activities rather than developmental investments.

Table 1: Agricultural Credit Disbursement in Ananthapuramu District during 2017–18

Particulars	Target (Rs. Crore)	Achievement (Rs. Crore)		Beneficiaries (No.)	
		Crop Loan Renewals	Fresh Loans	Crop Loan Renewals	Fresh Loans
Crop Loans – Kharif	4201.44	4828.00	150.00	498541	43459
Crop Loans – Rabi	2686.19	2040.70	0.00	198542	Nil
Sub Total	**6887.63**	**6868.70**	**150.00**	**697083**	**43459**
Agriculture Term Loans	1338.45	462.02	—	12546	—
Allied Activities	496.00	455.49	—	6589	—
Agri Infrastructure & Agri Ancillary Activities	26.00	32.77	—	2456	—
Sub Total	**1860.45**	**950.28**	—	**21591**	—
Grand Total	**8748.08**	**7818.98**	**150.00**	**718674**	**43459**

Source: Hand Book of Statistics, Ananthapuramu (2018).

Income of Sample Farmers from Different Sources

The analysis of income sources of sample farmers reveals that crop cultivation remains the major source of livelihood in the district. Crop cultivation accounted for about 66 percent of the total income of the sample farmers. Marginal and small farmers depended heavily on crop cultivation for their livelihood. Income from hiring out labour emerged as another important source of income, particularly under rural employment schemes such as MGNREGS. Milk production contributed only a supplementary share to the total income of farmers.

Table 2: Income of Sample Farmers from Different Sources

Land Holding Size Group	Income during Reference Period (Rs. Per Annum)							
	Crop Cultivation (Rs. per annum)	(%)	Milk Production (Rs. per annum)	(%)	Hiring out of Labour (Rs. per annum)	(%)	Total Income (Rs. per annum)	(%)
Marginal Farmers	810000	86.8	96000	10.3	27000	2.9	933000	100.0
Small Farmers	1949000	67.2	199900	6.9	752400	25.9	2901300	100.0
Medium Farmers	2255500	61.6	133800	3.7	1273500	34.8	3662800	100.0
Large Farmers	588200	56.4	42000	4.0	413400	39.6	1043600	100.0

Total	**5602700**	**65.6**	**471700**	**5.5**	**2466300**	**28.9**	**8540700**	**100.0**

Source: Primary Data.

Crop Productivity in Ananthapuramu District

Crop productivity in Ananthapuramu District remains comparatively low due to inadequate rainfall, poor irrigation facilities, shallow soils, and dependence on rainfed agriculture. The average yields of principal crops during 2017–18 were lower compared to state averages. Groundnut, which is the dominant crop in the district, also recorded lower productivity due to drought conditions and soil moisture stress.

Table 3:Average Yield of Principal Crops in Ananthapuramu District

S. No.	Name of the Crop	Average Yield per ha during 2017–18 (Kgs)	Average Yield per ha during preceding 5 years (Kgs)
1	Paddy	4190	3151
2	Wheat	716	742
3	Jowar	514	464
4	Bajra	1337	744
5	Maize	3936	3265
6	Ragi	2420	1754
7	Bengalgram	680	—
8	Redgram	194	—
9	Greengram	227	—
10	Horsegram	277	—
11	Blackgram	801	—
12	Groundnut	1075	441
13	Sesamum	220	—
14	Castor	572	—
15	Sugarcane	104430	90055
16	Tobacco	1063	1063
17	Cotton	299	246

Source: Government of Andhra Pradesh (2019).

Reasons for Increasing Debts among Farmers

Farmer indebtedness has become one of the major socio-economic problems in the district. The study identified several reasons responsible for increasing debts among farmers. Low levels of agricultural production and low farm income were the major reasons reported by the respondents. Crop failures, high cultivation costs, and dependence on private money lenders further aggravated the debt burden.

Table 4: Reasons Given by Sample Farmers for Increasing Debts Over Time

Reasons	Marginal Farmers & Percentage		Small Farmers & Percentage		Medium Farmers & Percentage		Large Farmers & Percentage		Total Farmers & Percentage	
Inadequate Institutional Finance	6	40.0	0	0.0	0	0.0	0	0.0	6	2.0
Loans from Private Sources	0	0.0	15	10.9	0	0.0	0	0.0	15	5.0
High Rate of Interest on Loans	0	0.0	55	40.1	13	10.7	8	29.6	76	25.3
Charging Compound Interest	9	60.0	14	10.2	25	20.7	0	0.0	48	16.0
Low Levels of	0	0.0	6	4.4	58	47.9	19	70.4	83	27.7

Production Loss of Crops	0	0.0	13	9.5	25	20.7	0	0.0	38	12.7
Failure of Crops	0	0.0	23	16.8	0	0.0	0	0.0	23	7.7
High Cost of Cultivation	0	0.0	6	4.4	0	0.0	0	0.0	6	2.0
Low Prices of Produce	0	0.0	5	3.6	0	0.0	0	0.0	5	1.7
Total	**15**	**100.0**	**137**	**100.0**	**121**	**100.0**	**27**	**100.0**	**300**	**100.0**

Source: Primary data

VII. MAJOR FINDINGS OF THE STUDY

Dependence on Agriculture for Livelihood: The study reveals that agriculture continues to be the primary source of livelihood for the majority of rural households in Ananthapuramu District. Most farmers depend on crop cultivation and allied agricultural activities for their income and employment. Groundnut occupies a dominant position among cultivated crops and contributes significantly to the agricultural economy of the district. However, agriculture in the district is highly dependent on monsoon rainfall due to inadequate irrigation facilities and limited water resources.

Role of Agricultural Credit in Agricultural Development: The findings indicate that agricultural credit plays a significant role in supporting agricultural development and crop production in the district. Institutional credit enables farmers to purchase seeds, fertilizers, pesticides, irrigation equipment, and other agricultural inputs required for cultivation. Access to agricultural finance also helps farmers adopt improved farming practices and modern agricultural technologies.

Crop Loan Utilization: The study observed that crop loans constitute the major share of agricultural credit disbursement in the district. However, most of the institutional credit was provided through renewal of existing crop loans rather than fresh developmental loans. This indicates that agricultural credit is mainly utilized for sustaining existing cultivation activities instead of promoting long-term agricultural investment and infrastructure development.

Sources of Farmer Income: The analysis shows that crop cultivation contributes the highest share to the annual income of sample farmers. Hiring out labour under rural employment opportunities also emerged as an important supplementary source of income, particularly among small and medium farmers. Dairy and milk production activities contribute only a minor share to household income. The overall income levels of farmers remain relatively low due to unstable agricultural conditions and recurring crop losses.

Low Crop Productivity: The study found that crop productivity in Ananthapuramu District remains comparatively low because of poor irrigation facilities, low soil moisture, and dependence on rainfed agriculture. Groundnut productivity, despite being the major crop of the district, remains below potential levels due to drought conditions and climatic uncertainties. Other crops such as pulses, millets, and cereals also recorded low average yields compared to state averages.

Farmer Indebtedness: Farmer indebtedness emerged as one of the major socio-economic problems identified in the study. Low agricultural production, crop failures, high cultivation costs, and low market prices were found to be the primary reasons for increasing debts among farmers. Many farmers continue to depend on private money lenders due to inadequate institutional finance and delays in loan disbursement.

Impact of Informal Credit Sources: The study observed that high rates of interest and compound interest charged by private money lenders further worsen the financial condition of farmers. Dependence on informal credit sources increases financial insecurity and limits the ability of farmers to invest in productive agricultural activities.

Adoption of Modern Agricultural Practices: The findings indicate that modern agricultural practices such as drip irrigation, sprinkler irrigation, watershed development, and crop diversification have positively influenced agricultural sustainability in some parts of the district. Farmers are gradually shifting towards

drought-resistant crops, horticulture, pulses, and millets to reduce agricultural risk and improve income stability.

Government Support Measures : Government support measures such as crop insurance, subsidized seeds, soil testing, farmer training programs, and farm mechanization initiatives have contributed to improving agricultural awareness and productivity among farmers. These measures have helped farmers adopt better farming techniques and improve agricultural performance.

Overall, the study concludes that agricultural credit has a positive impact on agricultural development and crop production in Ananthapuramu District. However, sustainable agricultural growth in the region requires strengthening irrigation infrastructure, improving accessibility to institutional credit, promoting climate-resilient farming practices, and enhancing farmer support systems. Effective implementation of agricultural development policies and improved rural financial services are essential for ensuring long-term agricultural sustainability and improving the socio-economic conditions of farmers in the district.

VIII. SUGGESTIONS

Agriculture in Ananthapuramu District largely depends on rainfall; therefore, strengthening irrigation facilities is essential for sustainable agricultural development. Expansion of drip irrigation, sprinkler systems, watershed projects, check dams, and rainwater harvesting structures can improve water conservation and reduce drought-related crop failures. Farmers should also be encouraged to cultivate drought-resistant crops such as millets, pulses, and short-duration groundnut varieties to reduce agricultural risk and improve income stability.

Institutional agricultural credit should be made easily accessible to farmers through simplified loan procedures and timely disbursement of crop loans. Special attention should be given to small and marginal farmers who often depend on private money lenders charging high rates of interest. Strengthening crop insurance schemes and providing low-interest agricultural loans can reduce farmer indebtedness and improve financial security in rural areas.

Modern agricultural practices and scientific farming methods should be promoted to improve crop productivity and sustainability. Farmers need regular training regarding improved seed varieties, mechanization, soil testing, pest management, and climate-resilient farming practices. Agricultural extension services should provide timely information on weather conditions, market prices, and government support schemes through digital platforms and village-level awareness programs.

The government should also improve market infrastructure, storage facilities, transportation, and farmer support systems to ensure fair prices for agricultural produce. Promotion of allied agricultural activities such as dairy farming, poultry farming, and horticulture can provide supplementary income and reduce dependence on crop cultivation alone. Overall, integrated efforts in irrigation development, institutional finance, crop diversification, and farmer awareness are essential for achieving long-term agricultural sustainability and rural development in Ananthapuramu District.

IX. CONCLUSION

The study on the *impact of agriculture on agricultural development and crop production in Ananthapuramu District* clearly shows that agriculture continues to be the primary source of livelihood and a key driver of rural development in the region. However, agricultural growth and crop productivity are highly constrained by factors such as low and erratic rainfall, frequent drought conditions, limited irrigation facilities, and dependence on rainfed farming systems.

Despite these challenges, agriculture in the district has shown gradual improvement through government interventions, adoption of improved crop varieties, and increasing awareness among farmers. Crops like groundnut remain dominant, but there is a visible shift toward diversification and adoption of sustainable farming practices.Overall, the study concludes that strengthening irrigation infrastructure, promoting climate-resilient crops, improving soil and water conservation practices, and enhancing farmer support systems are essential for achieving long-term agricultural development. With proper planning and implementation of modern agricultural techniques, Ananthapuramu District

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