



CREDIT SUPPORT BY NABARD IN BIHAR'S AGRICULTURE, IRRIGATION, FOOD & NUTRITION SECURITY

Pawan Sharma

Ph.D. Research Scholar, Department of Commerce,
B. R. A. Bihar University, Muzaffarpur Bihar (INDIA) - 842001.

ABSTRACT

Against the backdrop of a large population in rural areas and high level of poverty, Agricultural sector is critical for Bihar's development. However, it continues to be the single most important source of livelihood for the majority of the rural population of this state. Irrigation in Bihar is key input for State's agriculture development. In this modern era, irrigation is a basic infrastructure for the agricultural economy in order to raising agricultural productivity. Food & Nutrition Security is a concept that focuses on life-saving initiatives and/or schemes for every human being today and also beneficial for future generations. NABARD's irrigation and food & nutrition security related activities primarily closely connected with sub sectors of agriculture sector. These sub sectors are Farm Credit, ii. Agricultural Infrastructures and iii. Ancillary Activities. NABARD provides substantial amount by way of refinance (indirect)/ finance (direct) for these concerning areas.

This article aims to bring out the stylised data related to above fields that has been released by NABARD. The experience from these data has been captured to the extent possible.

KEYWORDS

NABARD *Farm Credit* *Irrigation* *Agriculture* *Food & Nutrition Security*

1.1 Introduction

Indian agriculture contributes in various ways: namely; in the provision of food for the increasing population especially vegetarians, supply of adequate raw material to a growing urban and rural industrial sector, generations of foreign exchange earnings, and among others. Against the backdrop of a large population in rural areas and high level of poverty, Agricultural sector is critical for Bihar's development. However, it continues to be the single most important source of livelihood for the majority of the rural population of this state.

The challenges of fragmented landholding, natural hazards (floods, droughts and pest) including climate change issues are being faced by State's Agriculture, as resulting low farm productivity. The vagaries of weather and limited ability to invest force our farmers to renounce farming and moving towards other modes of employment, which cannot be ignored. In recent years, Bihar's economic growth seems to be moving away from agriculture as like other developing economies of India, so, the contribution of agricultural sector in the crop production and rural income has decreased in Bihar. Still, agricultural sector contributes about 20 percent to the state's GSDP.

Irrigation is the process of supplying water to agricultural land by artificial means in maximising and stabilizing yield of quality crops with economic and efficient system as well.

Agriculture without irrigation is not possible in the age of ‘climate change’. The untimely/excessive rainfall is causing crops losses in successive seasons in the state. Irrigation in Bihar is key input for State’s agriculture development. In this modern era, irrigation is a basic infrastructure for the agricultural economy in order to raising agricultural productivity. To enhance agricultural productivity and make agriculture sustainable, spread of micro irrigation scheme among Bihar State’s small and marginal farmers are critical. Medium and major irrigation schemes also can play a vital role to achieve higher cropping intensity. Irrigation Projects are the ‘live heritages’ because these can generate employment opportunities to millions of agricultural households of the rural Bihar.

Food & Nutrition Security is a concept that focuses on life-saving initiatives and/or schemes for every human being today and also beneficial for future generations.

Food insecurity and malnutrition are internationally accepted violation of human rights and/or dignity and leads to various physical and mental impairments of human beings. Food insecurity and malnutrition exist in rural Bihar because of many reasons that includes lack of sufficient and safe food as well as poor nutritional requirements, low priority for healthy environment, deficiencies of care-practices, and untimely & poor funding from different stakeholders.

This is why, the concept of Food and Nutrition Security is burning issue in the age of ‘climate change’ throughout the world, including India. The per-capita consumption of milk, fish and meat and other nutritious food and commodities in Bihar is lower than other states of our country. Ensuring food and nutrition security is a challenge for Bihar state, given its huge population and high levels of poverty and malnutrition. Bihar is a net agricultural exporter, particularly of milk, fruits and vegetables and cereals. However, food availability is threatened by the effects of climate change and declining water resources on agriculture output. In order to ensure food and nutrition security for all, now and in the future, agriculture must made sustainable

1.1.1 Problem of the Study

Access to timely, affordable, and low-cost agricultural credit is critical in facilitating the growth of a rural economy. Modern agriculture demands more quantum of credit. Capital formation and productive assets creation in agriculture also calls additional credit requirements. So problem of agriculture credit is even more prevalence year after years in Bihar because of increasing population of farming communities of our country, including Bihar. Over the years, farmers of Bihar state have been facing multiple challenges and one of the most dominating reasons for this crisis has been the weakening of the rural credit structure and inability of the system to strengthen credit arrangements for the farm community, particularly for small and marginal farmers.

1.1.2 Design of the Study

To look the performance of various credit facilities of NABARD that involves in agriculture growth, irrigation extension and securing food & nutrition security in Bihar State.

1.1.3 Research Methodology

This study is fully based on secondary data. All required data have been collected from different reports of NABARD (like NABARD's Annual Report Various Years, pamphlets, Handbooks, Booklets, Bihar State Focus paper, Circulars of NABARD, different reports in pdf form) that provided by NABARD Bihar Regional Office, Patna.

2.1 Role of NABARD in Bihar's Agriculture, Irrigation, Food & Nutrition Security

NABARD's irrigation and food & nutrition security related activities primarily closely connected with sub sectors of agriculture sector. These sub sectors are i. Farm Credit, ii. Agricultural Infrastructures and iii. Ancillary Activities. NABARD provides substantial amount by way of refinance (indirect)/ finance (direct) for these concerning areas.

The effectiveness of credit depends, inter alia, on credit absorption capacity, which is influenced by technology, extension support, rural infrastructure, marketing facilities, transportation, storage, etc. As part of its mandate, NABARD works on both the supply side and demand side.

2.1.1 Refinance Support for Agriculture and Allied Activities

2.1.1.1 Short Term Refinance Support for SAO in Bihar

Seasonal Agricultural Operations (SAO) - Covers such activities as are undertaken in the process of raising various crops and are seasonally recurring in nature. The activities include among others, ploughing and preparing land for sowing, weeding, and transplantation where necessary, acquiring and applying inputs such as seeds, fertilizers etc. and labour for all operations in the fields for raising and harvesting the crops.

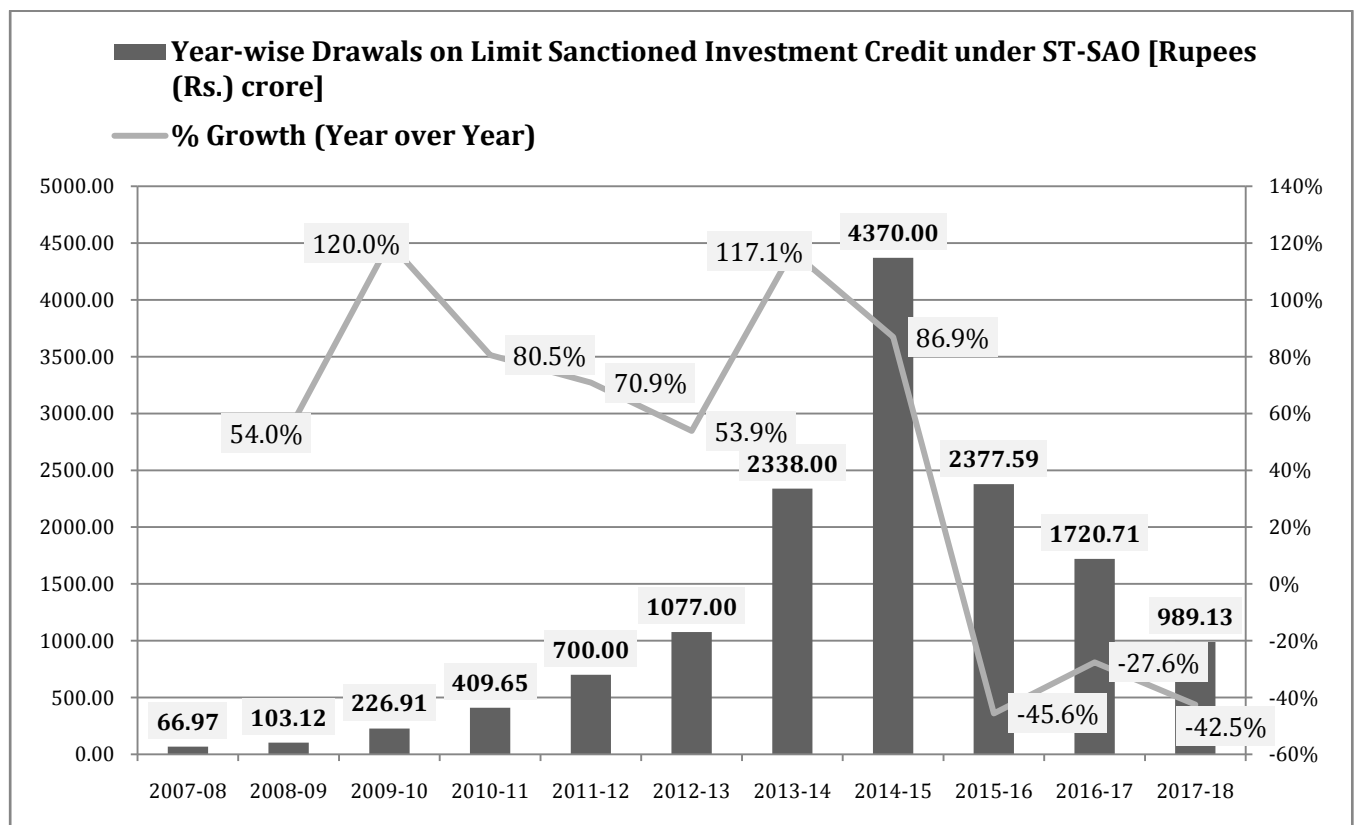
Short-term SAO lending is main activity of Bihar State Rural Financial Institutions like, Bihar State Cooperative Banks (BStCBs) (on behalf of 22 District Central Cooperative Banks (DCCBs)) and 2 Bihar Regional Rural Banks (BRRBs). NABARD render concessional refinance under this facility at 4.5 percent to Bihar's Rural Banks and Cooperatives to enable them finance crop loan at 7% per annum rate of interest to State's farmers towards attainment of the goals of food security as well as meeting the growing the demand for agricultural credit in the state. These credit agencies can apply for refinance to the NABARD Bihar Regional office, Patna against their financed crop loans of farmers under this facility. Refinance is provided for production purposes at concessional rate of interest to State Cooperative Banks (StCBs) and Regional Rural Banks (RRBs), by way of sanction of credit limits. Each withdrawal against the sanctioned credit limit is repayable within 12 months.

Details of Refinance to Agriculture in Bihar

Chart 1.1 reveals NABARD's Short-Term (ST) Seasonal Agricultural operations (SAO) Refinance Support for Farm Credit in Bihar from 2007-08 to 2017-18. Chart clearly revealed that financial year 2014-15 received highest refinance received by Bihar from NABARD stood at Rs.4370 crores. Financial Year 2015-16 placed on second position in term of refinancing in favour of Bihar stood at Rs.2377.59 crores.

From the Chart 1.1, it has been observed that the third highest refinance amount recorded in 2013-14 Rs.2338 crores. The refinancing amount under ST-SAO for Bihar recorded in 2007-08 Rs.66.97 crores and continuously increased upto 2014-15 and unexpectedly decreased from 2015-16 to 2017-18. The 2015-16, 2016-17 and 2017-18, all respective financial year registered negative growth rate in order -45.6% (highest in all), -27.6% and -42.5%. This implies the demand of ST-SAO is decreasing in recent years.

Chart 1.1: Year-wise Short Term SAO Refinance Support by NABARD in Bihar from 2007 - 08 to 2017-18



2.1.1.2 Additional Short-term Seasonal Agricultural Operations (ST-SAO)

NABARD introduced a new line of credit in the year 2016-17 for helping banks to tide over liquidity constraints arising banks (i.e. Rural Banks and cooperatives) due to drought increased ground-level demand for credit, low accretion of deposits and also withdrawal of deposits by District Central

Cooperative Banks etc. The Drawal on the sanctioned amount under Additional Short Term SAO represents amount of Short Term SAO Refinance.

To pursue overall agriculture growth for ensuring food and nutrition security, NABARD adopted a policy to extend a higher quantum of refinance to priority states/areas under Additional ST-SAO facility. Under this refinance facility, no any additional refinance disbursed by NABARD in Bihar State.

2.1.1.3 Kisan Credit Card Scheme – A Single Window Approach for Farm Credit

The Kisan Credit Card (KCC) has emerged as an innovative credit delivery mechanism to meet the requirements of the farmers in a timely and hassle-free manner.

KCC available to all eligible farmers with adequate credit limits according to Scale of Finance, area, and crop cultivated. This scheme has been implementation in Bihar by all commercial banks, Regional Rural Banks and Cooperatives in order to facilitating smooth flow of crop loans as well as term loan. With increasing cost of cultivation and the existence of large number of small and marginal farmers, the credit requirements for the farmers are increasing. However, the coverage of farmers under KCC (Kisan Credit Card), which has emerged as the only and most convenient mode of credit for crop production, is very limited. To make more convenient and farmer friendly, emphasis is now on issuing KCC as Rupay Card.

Efforts have been made to modify the scheme as per the needs of the farmers in order to improve the performance of agriculture and allied activities in the country, including Bihar. This scheme covers all the farmers the state.

Some of the major features of Modified KCC (Kisan Credit Cards) Scheme are as under:

- Assessment of crop loan component based on the scale of finance for the crop plus insurance premium x Extent of area cultivated + 10% of the limit towards post-harvest household/ consumption requirements + 20% of limit towards maintenance expenses of farm assets.
- Flexi KCC (Kisan Credit Cards) with simple assessment prescribed for marginal farmers.
- Validity of KCC for 5 years.
- For crop loans, no separate margin need to be insisted as the margin is in-built in scale of finance.
- No withdrawal in the account to remain outstanding for more than 12 months; no need to bring the debit balance in the account to zero at any point of time.
- Interest subvention /incentive for prompt repayment to be available as per the Government of India and / or State Government norms.
- No processing fee up to a limit of Rs. 3.00 lakh.

- One time documentation at the time of first availment and thereafter simple declaration (about crops raised/ proposed) by farmer.
- KCC cum Saving Bank (SB) account instead of farmers having two separate accounts. The credit balance in KCC cum Saving Bank account to be allowed to fetch interest at saving bank rate.
- Disbursement through various delivery channels, including ICT (Information and Communications Technology) driven channels like
- ATM/ PoS/ Mobile handsets.

The agency-wise disbursement of New KCC (Kisan Credit Card), given in Table 1.1.

Table 1.1: Agency-wise Status of New KCC Disbursement (in numbers) in Bihar

(Number in '0000)					
Agency	2013-14	2014-15	2015-16	2016-17	2017-18
Commercial Banks	67.31	62.05	128.25	40.72	40.54
Regional Rural Banks	38.76	35.21	26.8	16.2	11.94
Cooperative Banks	1.13	13.06	10.09	0.71	0.45
Total	107.2	110.32	165.14	57.63	52.93

Source: 1. NABARD Bihar State Focus Paper, 2017-18 (Table No. 2.9, p.9)
 2. NABARD Bihar State Focus Paper, 2018-19 (Table No. 2.9, p.9)
 3. NABARD Bihar State Focus Paper, 2019-20 (Table No. 2.9, p.28)

2.1.1.4 Conversion Assistance in case of Natural Calamity

Substantial crop loss on account of natural calamities like, flood and drought and other natural disasters declared by State Governments, not only affecting the farmers' ability to repay their ST-SAO loans to banks but also underline the viability of the agriculture sector. For providing relief to the affected farmers whose crops are damaged due to occurrence of natural calamities, Short-Term SAO credit of farmers for 12 month can be converted by State Cooperative Banks and Regional Rural Banks into medium-term credit for period upto 5 years subject to certain conditions to enable them to apply for a fresh loan.

2.1.1.5 Scheme-wise Schematic Lending in Bihar (Investment Credit)

From many years in Bihar, Schematic Lending of NABARD has been providing facilities to the approved financial institutions like, Bihar Scheduled Commercial Banks (BSCBs), Bihar State Cooperative Banks (StCBs), Bihar Regional Rural Banks (RRBs), Bihar State land development Banks for various agriculture & allied activities viz. Agri-clinics & Agribusiness, Farm Mechanisation, Land Development, and many others with tenors of 18 months to 5 years.

Details of Refinance relating to Bihar's Agriculture

Chart 1.2 reveals the Long-Term Refinance Disbursement relating to **Bihar's Agriculture** under Schematic Lending of NABARD. Chart clearly revealed that first highest refinance amount provided in 2016-17 was Rs.1464.09 crores. The second highest refinance amount received by Bihar Rs.1435.39 crores in 2015-16. The third highest refinance amount obtained

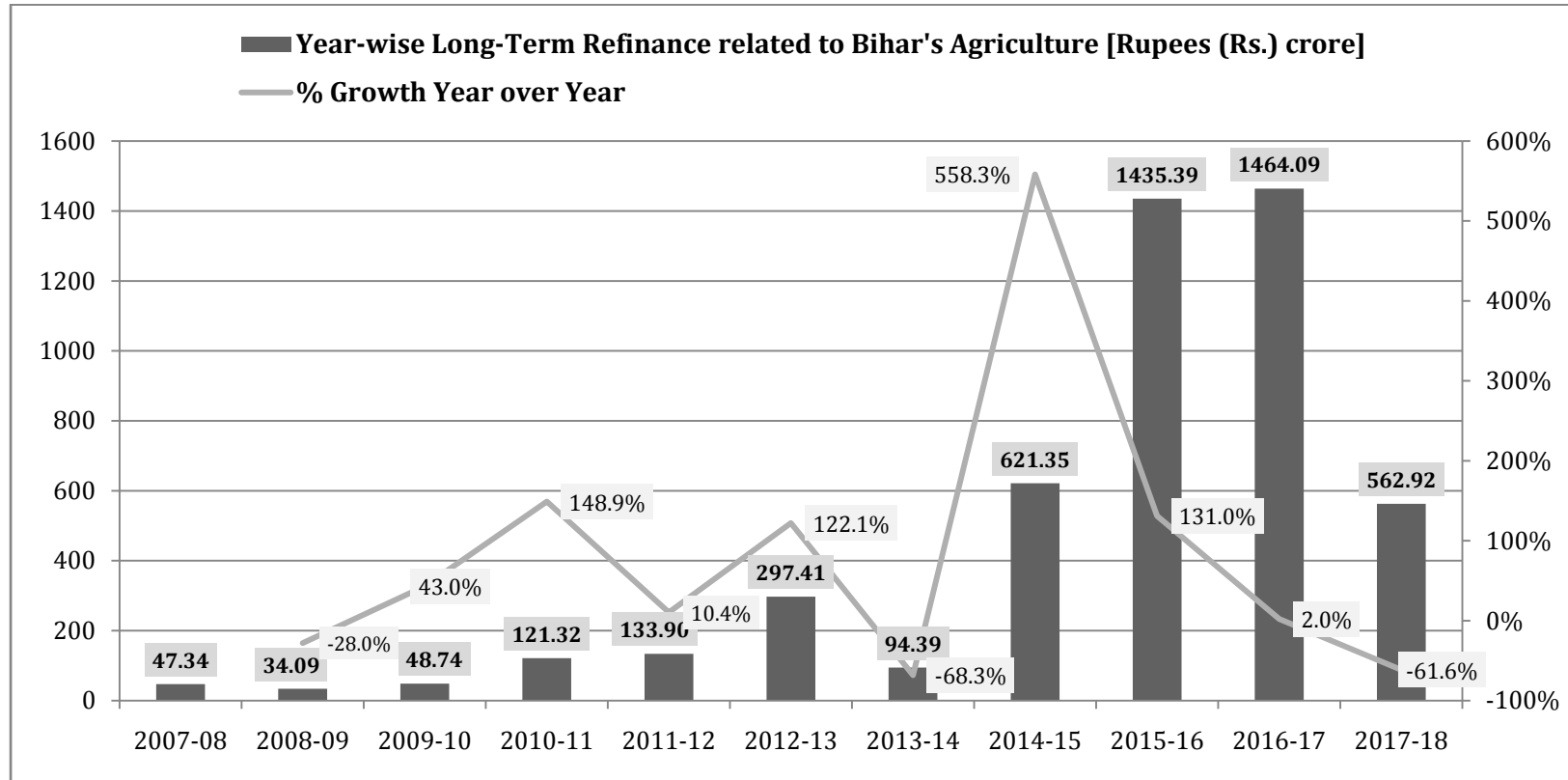
by the state Rs.621.35 crores in 2014-15. The lowest refinance amount recorded in 2008-09 stood at Rs.34.09 crores. Chart 5.2 shows Farm sector related refinance recorded negative growth trends during following financial years (FY): FY2008-09 with -28.0%, FY2013-14 with -68.3% and lastly, FY2017-18 with -61.6%.

Chart 1.2 indicates that the percentage of increase shows a fluctuating trend and there was a declining trend in the percentage of increase during various years. As per Chart, the highest percentage of increase growth rate was 558.3% during 2014-15 and remaining increase growth rates in order – 43.0% during 2009-10, 148.9% during 2010-11, 10.4% during 2011-12, 122.1% during 2012-13, and last 131.0% during 2015-16. As per Chart, lowest positive growth recorded for refinance in the year 2016-17 only 2.0%. Overall we can say that trend of long term refinance under farm sector has rapidly increased from 2014-15 to 2016-17, but in decreased in 2017-18.

Details of Refinance relating to Allied to Bihar's Agriculture

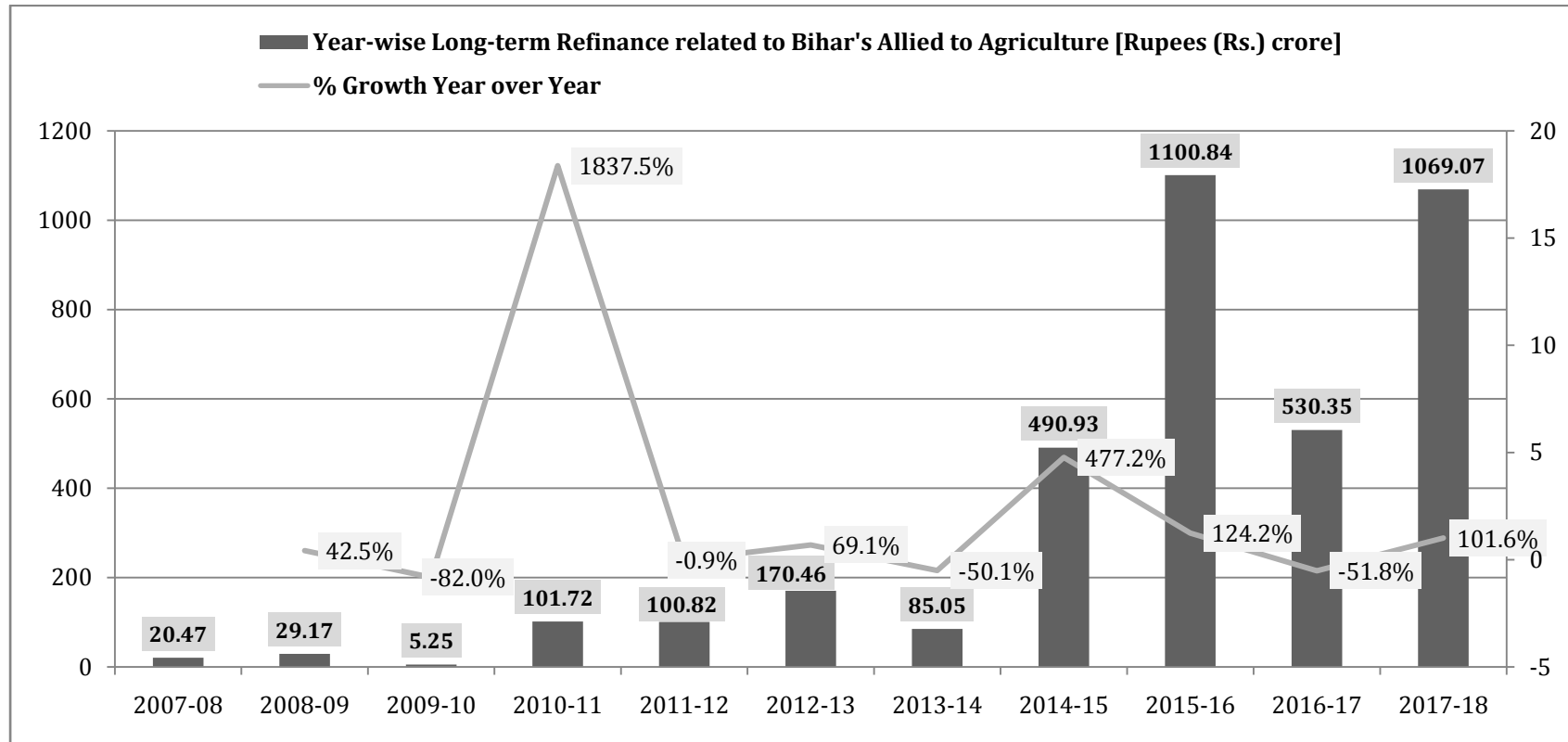
Chart 1.3 reveals the Long-Term Refinance Disbursement relating to **Allied to Bihar's Agriculture** under Schematic Lending of NABARD. Chart clearly revealed that first highest refinance amount provided in 2015-16 was Rs.1100.84 crores. The second highest refinance amount received by Bihar Rs.1069.07 crores in 2017-18. The third highest refinance amount obtained by the state Rs.530.35 crores in 2016-17. The lowest refinance amount recorded in 2009-10 stood at Rs.5.25 crore.

Chart 1.2: Year-wise Long Term Refinance Disbursement by NABARD to Bihar’s Agriculture Sector under Investment Credit (Schematic Lending) from 2007 -08 to 2017-18



Note: Refinance Disbursement amount (Rs. crore) relating to Agriculture Sector - Minor Irrigation, Land Development, Farm Mechanisation, Plantation & Horticulture, Agri-clinics & Agri-business, and Forestry (including Storage & Market Yard).

Chart 1.3: Year-wise Long Term Refinance Disbursement by NABARD to Allied to Bihar’s Agriculture Sector under Investment Credit (Schematic Lending) from 2007 -08 to 2017-18



Note: Refinance Disbursement amount (Rs. crore) relating to Allied to Agricultural Sector – Dairy Development, Fisheries, Poultry/Sheep/Goat/Piggery, Animal Husbandry (Others), Bio-Gas Plant, and Others (e.g. Animal & Animal carts).

2.1.1.6 Minor Irrigation

Minor Irrigation has been a thrust area for NABARD. Ground water irrigation and surface as well both are important for Bihar's irrigation development. The construction of wells, installation of pump sets, lift irrigation schemes and water conservation devices water management schemes, such as, drip and sprinkler irrigation systems, underground pipe lines, and, percolation tanks and other related activities under Minor irrigation are mainly supported in Bihar state by Rural Financial Institutions (RFIs) (i.e. banks) through refinance support of NABARD. Credit is provided by Rural Financial Institutions (RFIs) for Medium and long-term loans under minor irrigation scheme of Investment credit to individual farmers, groups or cooperative societies in Bihar by the Bihar State Cooperative Banks the Scheduled Commercial Banks, the Regional Rural Banks (RRBs) who in turn avail re-finance from NABARD.

There are three categories of blocks identified by NABARD on the basis of groundwater availability: a dark block is one where long term annually replenishable groundwater resources have reached a stage of development to the extent of 85 percent or more of their availability. A grey block is the one where the stage of groundwater development is 65 percent or above. A white block is where the stage of groundwater development is less than 65 percent of its availability.

2.1.1.7 Solar Irrigation

A capital subsidy scheme was launched by NABARD that was effective from 3 November 2014 for promoting solar photovoltaic water pumping systems for irrigation purpose in the country. To promote subsidy for solar water pumps in Bihar, NABARD started this scheme with 1350 solar pumps in which the subsidy amount provided per pump routed through NABARD to Rural Banks and Commercial banks and 20% of the Total Financial outlay contributed by beneficiary and the remainder amount to be paid as loan by the banks at nominal rate.

Irrigation is a major input in agriculture amounting to about 70 percent of the total input cost, and use of solar powered pumps can decrease the input cost to 25 percent.

Solar irrigation must promoted in rural Bihar by banking institutions, Non-Government agencies and other stakeholders, especially in the context of Government of India's targets of achieving doubling of farmers' income by the year 2022.

2.1.2 NABARD's Direct Finance for Agricultural Infrastructures

2.1.2.1 Assistance under Rural Infrastructure Development Fund

Assistance from Rural Infrastructure Development Fund (RIDF) is primarily utilised for minor and major irrigation projects, flood protection projects including other projects of the State. Bihar Government can borrow monies under RIDF for above mentioned projects that are very useful for Bihar's rural economy. The aims of irrigation and flood Protection projects and other rural infrastructure projects are to improve agricultural productivity, enhance the employment opportunities, especially for marginal and landless workers, as well as effective & suitable irrigation systems and expanding the women participation.

Table 1.2: Rural Infrastructure Projects implemented by various Implementing Departments of the State Government according to their nature under RIDF-Tranches

Rural Infrastructure Projects	Implementing agencies/departments
Small Hydro Projects	Energy Department
Construction of Rural Godowns	Food and Consumer Protection Department.
Minor Irrigation Projects	Minor Water Resources Department
Medium & Major Irrigations Projects & Flood Protection Projects	Water Resources Department

Source: RIDF Department, NABARD Bihar Regional Office.

2.1.2.2 Assistance under NIDA in Bihar

Within rural development, building infrastructure is the most important element. Traditionally, NABARD has been funding various rural infrastructure initiatives through Rural Infrastructure Development Fund (RIDF), working closely with State Governments. However, this channel of funding was facing some technical issues, thereby limiting the contribution of NABARD towards rural infrastructure development. To address this issue, NABARD launched a new line of credit, named NABARD Infrastructure Development Assistance (NIDA).

Main focus of this fund is in Bihar on infrastructure projects under agriculture, including storage and marketing infrastructure, rural connectivity. As per NABARD Bihar State Focus Paper, 2019-20, loan of Rs.178 crore sanctioned in favour of Bihar state, of which so far Rs.77 crore released to Bihar State Warehousing Corporation for construction of warehouses with storage capacity of 3.05 lakh Metric Tonne in 9 districts of Bihar. An amount of Rs. 2820.41 crore has been sanctioned for construction of 3977 (Kilometres) kms roads for providing connectivity to 4643 Tollas having population between 100 to 249 under State Government scheme —Sampark Tola Nischay Yojana.

2.1.2.3 Assistance under NABARD's Warehousing Schemes

As a step towards attaining food and nutrition security and supporting creation of scientific storage infrastructure for perishable as well as non-perishable in the country, including Bihar, Government of India allocated Rs.5000 crores each for FY2013-14 and FY2014-15 to NABARD through a scheme named 'Warehouse Infrastructure Fund (WIF)' for giving direct loans to public and private sector for construction of warehouses, godowns, silos and cold storage units to store agricultural produce.

2.1.3 Special fund for irrigation infrastructure

The Fund is being used for financing and fast tracking of incomplete major and medium irrigation projects identified by Ministry of Water Resources, River Development and Ganga Rejuvenation (MoWR, RD & GR), GoI in a mission mode so that the projects can be completed by December 2019. This will enable additional irrigation in 7.6 million hectare. LTIF is envisaged to fast tracking the completion of the 99 identified irrigation projects spread across 18 states including Bihar. In Bihar, 03 projects viz., Durgawati Reservoir project [02 projects amounting to Rs. 280 crore, as per NABARD Bihar State Focus Paper, 2018-19, (p.64)], North Koel reservoir project amounting to Rs. 1622 crore have been approved and Punpun Barrage have identified by Government of India (GoI) for completion of balance works under LTIF. For these projects under this fund, loan sanctioned related to Central share and state share stood Rs. 134.00 crores and nil amount, respectively, in which loan released from the side of Centre and state stood at Rs.67.73 crore and nil amount, respectively, as per NABARD Annual Report, 2017-18.

Micro Irrigation Fund

To promote water conservation through 'Per Drop More Crop' in water deficit areas of South Bihar, the prevailing system of flood irrigation may be checked by encouraging use of Drip and Sprinklers. The Bihar State Government is already giving substantial amount of subsidy on this. Micro Irrigation Fund set up in NABARD with an initial corpus of Rs.5000 crore, to achieve the goal 'per drop more crop', and to be utilized from the year 2017-18 onwards.

The main objective of the fund was to achieve overall improvement of water use efficiency by about 20% and to cover at least 10% of command area of surface irrigation projects. The fund on operationalisation, would be used for providing loans at reasonable rate to the State Government who are the major stakeholders for meeting the state's share in the projects. The main focus of this was to encourage farmers to install micro-irrigation systems to enhance the agricultural performance in Bihar as well as country.

3.1 NABARD's Climate Change Actions

NABARD has adopted "Climate Smart agriculture" so that food insecurity and poverty alleviation can be addressed effectively. This National bank also manages the adaptation and mitigation measures to counter the effects of climate change on rural livelihoods. NABARD in the recent past has taken up important steps for accessing national and international funding mechanisms to fulfil the need of climate change related finance.

4.1 Conclusion & Suggestions

4.1.1 Conclusion

It is evident from this study that NABARD does not render any facilities directly to rural communities and rural beneficiaries. NABARD is an apex development bank in India that handle all matters concerning policy, planning and operations in the field of credit for agriculture and other economic activities in rural areas in Bihar as well as India. NABARD is a national level bank that provides Production and Investment credit (refinance) to all eligible credit institutions that provide credit facilities to farmers, weavers, artisans, rural entrepreneurs and other rural communities for both farm and non-farm activities. It has many partners and subsidiaries that work for the development of agriculture and rural sector. Its contribution is immense in the field agriculture and rural development.

In spite of network of formal financial institution in Bihar, the Farmers and other rural people are under the trip of deceitful moneylenders for farm credit even today.

4.1.2 Suggestions:

1. NABARD must provide more quantum of refinance on easy term and condition for Farm and non-farm sector to each and every credit agencies of Bihar under Production and Investment credit in order to increase level of ground credit flow to agri-rural sector.
2. Bihar is flood-prone state. For this, NABARD must launch such insurance products that mitigate yielding risk and also cover crop insurance.
3. To make refinance /finance potential in Bihar State more pragmatic and realistic, NABARD needs to open more District Headquarters in the state.
4. Bihar Commercial Banks and other credit agencies of the state should increase level of long term finance to agriculture and allied activities for the development of capital formation and asset creation in the state so that our farmer may able to achieve modern farm assets. Bihar Land Development Banks, Bihar State Cooperative Banks needs to

recapitalise thereby increased investment credit (Schematic Lending) in the state.

5. Investment credit renders varieties of schemes. The new list of scheme can be included for financing mobile service centre for farmers, rural health, cattle insurance, rural tourism, cyber-cafes, and other latest innovative schemes for rural communities. These schemes may be aid to capture the targets of double income of farmer in coming years.

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