

प्राक्कथन

नाबार्ड, क्षेत्र-वार ऋण संभाव्यताओं का आकलन करने के लिए विस्तृत सर्वेक्षण कर देश भर के सभी जिलों के लिए संभाव्यतायुक्त ऋण योजनाएं (पीएलपी) तैयार करता है जो बैंकों को शाखा ऋण योजनाएं और वार्षिक ऋण योजना तैयार करने के लिए आधारभूत दस्तावेज बनती हैं। मुझे नाबार्ड द्वारा वर्ष 2018-19 के लिए दक्षिण गोवा जिले की संभाव्यतायुक्त ऋण योजना प्रस्तुत करते हुए अत्यंत प्रसन्नता हो रही है।

वर्ष 2016-17 में राज्य का सकल घरेलू उत्पाद रु.62,000 करोड़ था। गोवा राज्य की अर्थव्यवस्था मजबूत, व्यावसायिक और विशिष्ट है जिसमें पर्यटन, खनन और उद्योगों का बहुत बड़ा हिस्सा है। गोवा राज्य में वे सभी तत्व विद्यमान हैं जिनसे यह यूरोपीय केंद्रों के समान ही एक वैश्विक गंतव्य स्थल बन सकता है। बैंकों द्वारा प्राथमिकता प्राप्त क्षेत्रों को वित्तीय सहायता दिए जाने से अर्थव्यवस्था को और अधिक सुदृढ़ बनाने में सहयोग मिलेगा। तथापि, बड़ी संख्या में आने वाले पर्यटकों के आतिथ्य के लिए कृषि उत्पादों की बहुत बड़ी मांग को ध्यान में रखते हुए कृषि क्षेत्र की ओर विशेष ध्यान देने की आवश्यकता है।

इस वर्ष की संभाव्यतायुक्त ऋण योजना की मुख्य धारा है 'प्रति बूंद अधिक फसल' जो भारत सरकार द्वारा निर्धारित वर्षतक 2022 किसानों की आय दुगुनी करने संबंधी सात नीतियों में से पहली नीति है। पानी की बचत की तकनीकों से न केवल पानी बचाने में सहायता मिलेगी, बल्कि निविष्टियों की लागत में बचत होगी और भूमि के अवमूल्यन को नियंत्रित किया जा सकेगा।

वित्तीय वर्ष 2016-17 की समाप्ति पर 27% के ऋण जमा अनुपात के साथ राज्य में ऋण लेने की दर कम है। भूजोतों के टुकड़ों में बटे होने, स्वामित्व को स्थापित करने के लिए समुचित हक विलेख के अभाव, खेती के लिए जमीन को मौखिक पट्टे पर देने और पिछले ऋणों में चूक के कारण बैंक अपने ऋण आधार को विस्तृत नहीं कर पाते। राष्ट्र के सर्वाधिक विकसित राज्यों में से एक होने और विश्व के शीर्ष पर्यटन स्थलों में शुमार होने के कारण राज्य में भोजन, मनोरंजन और परिवहन क्षेत्रों की नई व्यावसायिक गतिविधियों के वित्तपोषण की आवश्यकता है। इस पीएलपी में प्राथमिकता क्षेत्रों में उपलब्ध संभावनाओं और हितधारकों के बीच अपेक्षित समन्वय को सामने लाने का प्रयास किया गया है।

वर्ष 2018-19 के लिए दक्षिण गोवा की योजना में प्राथमिकता क्षेत्र की विभिन्न गतिविधियों के लिए रु.3635.64 करोड़ की ऋण संभाव्यता का आकलन किया गया है। मुझे उम्मीद है कि इस पीएलपी से उन क्षेत्रों की ऋण के विस्तार में बैंकों/ शाखाओं का सहयोग मिलेगा जहां ऋण की आवश्यकता है।

मुझे उम्मीद है कि इस संबंध में मुझे आपसे बहुमूल्य सुझाव प्राप्त होंगे और आप अपने विचारों से हमें अवगत कराएंगे ताकि भविष्य में हम पीएलपी दस्तावेज की गुणवत्ता और विषय-वस्तु दोनों में और अधिक सुधार कर सकें।

इस दस्तावेज को तैयार करने में जिला कलक्टर, संबंधित विभागों के अधिकारियों, बैंकों, विकास एजेंसियों और किसानों से मिले सहयोग और सहकार के लिए नाबार्ड इन सबके प्रति आभार व्यक्त करता है।



वी आर खुसरो

महाप्रबंधक / प्रभारी अधिकारी

नाबार्ड, गोवा

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FOREWORD

NABARD has been preparing Potential Linked Credit Plans (PLP) for all districts of the country by taking up a detailed exercise for assessing the sector-wise credit potentials. The PLPs form the basis for the lead bank to prepare the Branch Credit Plans and the Annual Credit Plan. It gives me great pleasure to present the PLP for the year 2018-19 prepared by NABARD for South Goa district.

The Goa State GDP for 2016-17 was ₹ 62,000 crore. Goan economy is dominated by Tourism, Mining and Industries. Goa has all the ingredients to emerge as a global destination a la European Centre's. Banks extending financial support to priority sectors would further provide stimulus for the economy to grow from strength to strength. However, agriculture sector needs special attention, keeping in view huge demand for agricultural produce due to hospitality being extended to large number of tourists.

The theme of the PLP this year is 'Per Drop More Crop', first of the seven strategies chalked out by Government of India for Doubling of Farmers' Income by 2022. Water saving techniques help not only in saving water, but saving on input cost and controlling land degradation.

The credit offtake in the State is low, with the Credit to Deposit Ratio being 27% as at the end of the financial year 2016-17. Issues like land fragmentation, lack of proper title to establish ownership, oral leasing of land for cultivation and defaults of previous loans, have come in the way of banks expanding their credit base. Being one of the most developed State of the nation and one of the top tourist destinations of the world, the State needs financing of new commercial activities in food, entertainment and transport sectors. The present PLP has attempted to bring forth the potentials available in the priority sectors, and the coordination required among stake holders.

The PLP of South Goa for the year 2018-19 projects credit potential of ₹ 3635.64 crore, for various activities under priority sectors. I hope the PLP would help the banks / branches in extending credit to the required sectors.

I look forward to your valuable suggestions and inputs in this regard to enable us to update and improve PLP document in future, both in terms of quality and content.

NABARD acknowledges the support and cooperation extended by the District Collector, officials of line departments, Bankers, Developmental Agencies and farmers in bringing out this document.



V. R. Khusro

General Manager/Officer-in-Charge

NABARD, Goa

17 October 2017

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Executive Summary

Potential Linked Credit Plan (PLP) is being increasingly recognised as a resource document and is referred by various agencies like the GoI, RBI, NITI Ayog, State Government, Banks, Industrial bodies, etc. The Annual Credit Plan (ACP) for Banks in the District is prepared with PLP as the base document.

RBI has revised the Priority Sector Lending norms, classifying priority sector into eight broad sectors, viz., (i) Agriculture (ii) Micro, Small and Medium Enterprises (iii) Export Credit (iv) Education (v) Housing (vi) Social Infrastructure (vii) Renewable Energy and (viii) Others. The activities covered under each of these subsectors have also undergone revision. The revision has been incorporated appropriately in the presentation of the individual chapters.

The theme of PLP 2018-19 is “Water Conservation – Per Drop More Crop”. The broad GoI macro level objectives, doubling of farmer’s income by 2022, increasing capital formation in agriculture, flow of 8% bank credit to Small Farmers (SF) / Marginal Farmers (MF), Financial Inclusion and Climate Change are kept in view while preparing the PLP.

Prime economic activities in the district are Tourism, Mining, Agriculture and Fisheries. Goa’s only International Airport (at Dabolim) and only major port (Mormugao Port Trust) are located in South Goa. The major crops grown are Paddy, Pulses, Sugarcane and Vegetables. Major plantation crops are Coconut, Cashewnut, Mango & Arecanut. The district economy is predominantly service oriented.

The banking outreach in the district is excellent with 49 Banks (Commercial / Cooperative / Urban) operating with a network of 423 rural and semi-urban branches. In addition, there are 50 Primary Agriculture Cooperative Societies (PACS) operating in South Goa District. The CD ratio of the district as on 31 March 2017 was only 26.71% which is a cause of concern. The total deposits with the banking system in the district as on 31 March 2017 were ₹ 33854 crore, against which the total advances were ₹ 9045 crore. Huge amounts of deposits, NRI remittances and high per capita income are the main reasons, for both, the vast banking network and low loan offtake.

The credit potential assessed for South Goa District during 2018-19 is ₹ 3635.64 crore as against the previous year projections of ₹ 3591.28 crore. Since banks have discontinued the Lead Bank Returns (LBRs), the subsector-wise data on credit flow for Farm Credit, Agriculture Infrastructure and Ancillary Activities under Agriculture is unavailable for the year 2016-17.

88% of the land holdings in South Goa are operated by SF / MF. It is expected that substantial credit flow from banks will be directed towards them. A good portion of the credit is also estimated to flow to the Self Help Groups (SHGs) and Joint Liability Groups (JLGs) thus helping in Financial Inclusion of the marginalized section of people. During this year NABARD is launching its **E-Shakti** initiative in South Goa under which the data on the SHGs in the District will be digitized.

Climate Change preparedness is one area in which the District is lagging. South Goa located along the bio diversity rich Western Ghats and Arabian Sea coast on eastern and western sides is likely to see the effects of the climate change by way of erratic rainfall, temperature fluctuations and sea level rise. NABARD is the National Implementing Entity (NIE) for climate change projects in the country. The window for tapping climate change funds under the National Adaptation Fund on Climate Change (NAFCC) and Green Climate Fund (GCF) are open for which suitable projects need to be developed for the District / State.

Government of Goa has devised attractive subsidy schemes for Agriculture and allied activities like Animal Husbandry and Fisheries. There is a need for convergence of the efforts on the part of State

Government, NABARD, Research Institutions, Banks and other stakeholders to achieve the objective of doubling the farmers' income by 2022. To facilitate this branding of the agricultural produce, organic agriculture, value addition and marketing set-up has to be in place.

The infrastructure support by way of modernization of market yards, eNAM readiness, construction of warehouses and cold storages, road network has to be established for which the State Government may tap the Rural Infrastructure Development Fund (RIDF) / Warehousing Infrastructure Fund (WIF) / NABARD Infrastructure Development Assistance (NIDA) funds available with NABARD. There is also a need to set up a designated Food park in the State to avail of funds from NABARDs Food Processing Fund (FPF).

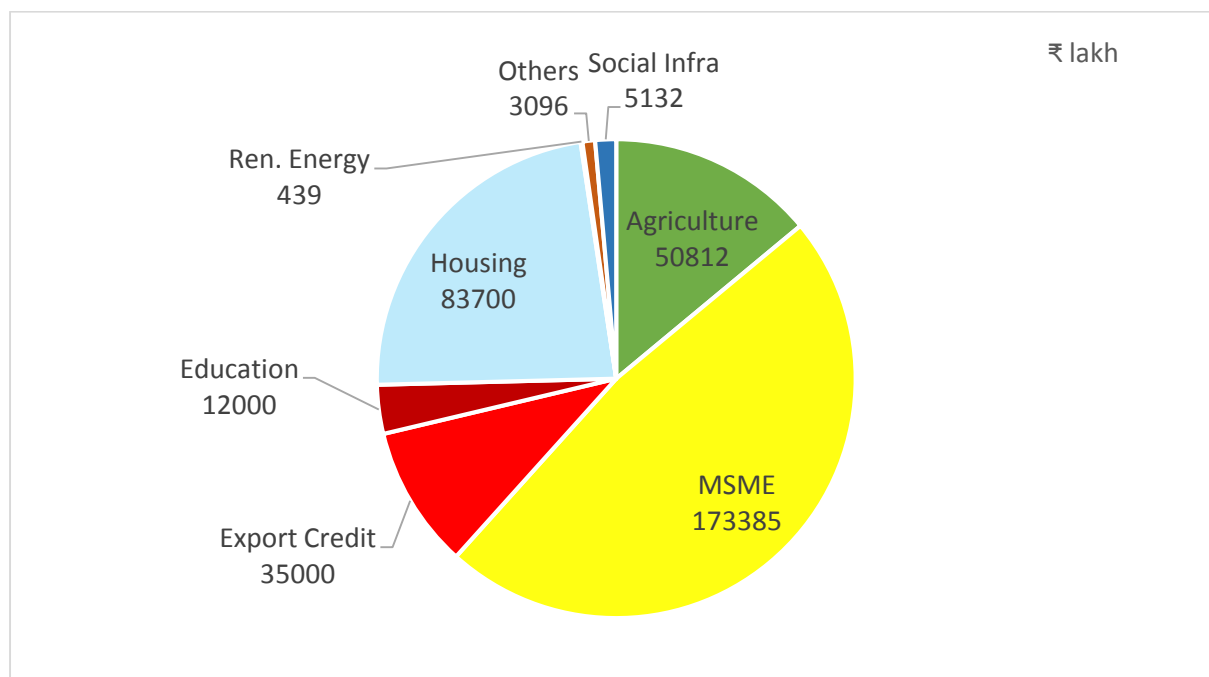
Resolving issues pertaining to ownership of land / issue of tenancy cards, sprucing the tail end distributaries of Salaulim Irrigation Project, increasing use of micro irrigation techniques, rejuvenation of the senile cashew and coconut plantations in the State, promotion of floriculture, issue of soil health cards, facilitation for accreditation of organic produce of the State are some of the other measures that need to be addressed urgently by the State Government.

The action plan for doubling of farmer's income in the District by 2022 will need to focus on productivity improvement of crops, crop diversification, Intensification and Integrated Farming System approaches. Adequate focus has also to be given to reduce the cost of cultivation through promotion of mechanization in agriculture and allied activities, application of the right doses of nutrients / plant protection chemicals, etc. Policy reforms in land ownership, community farming, contract farming and optimising support price for agricultural produce are also required to be implemented along with creating value chain supply network by post-harvest management and value addition.

Appendix A to Annexure 1**Broad Sector wise PLP projections – 2018-19**

(₹ Lakh)

Sr. No.	Particulars	PLP Projections 2018-19
A	Farm Credit	
i	Crop Production, Maintenance and Marketing	21989.00
ii	Term Loan for agriculture and allied activities	24770.00
	Sub Total	46759.00
B	Agriculture Infrastructure	1958.00
C	Ancillary activities	2095.00
I	Credit Potential for Agriculture (A+B+C)	50811.00
II	Micro, Small and Medium Enterprises	173385.00
III	Export Credit	35000.00
IV	Education	12000.00
V	Housing	83700.00
VI	Renewable Energy	439.00
VII	Others	3096.00
VIII	Social Infrastructure involving bank credit	5132.00
	Total Priority Sector	363564.00

**Broad Sector-wise PLP Projections 2018-19**

Appendix B to Annexure 1**Summary of Sector / Sub-sector wise PLP projections – 2018-19**

(₹ Lakh)

Sr. No.	Particulars	PLP Projections 2018-19
I	Credit Potential for Agriculture	
A	Farm Credit	
i	Crop Production, Maintenance and Marketing	21986.00
ii	Water Resources	2277.00
iii	Farm Mechanisation	4536.00
iv	Plantation and Horticulture	4486.00
v	Forestry and Waste Land Development	93.00
vi	Animal Husbandry – Dairy	3173.00
vii	Animal Husbandry – Poultry	303.00
viii	Animal Husbandry – Sheep, Goat, Piggery, etc.	276.00
ix	Fisheries (Marine, Inland, Brackish water)	2262.00
x	Farm Credit - Others	7367.00
	Sub Total	46759.00
B	Agriculture Infrastructure	
i	Construction of storage facilities (Warehouses, Market yards, Godowns, Silos, Cold storage units/ Cold storage chains)	363.00
ii	Land Devt., Soil conservation, Watershed Development	1376.00
iii	Agri. Infra - Others (Tissue Culture, Agri Biotechnology, Seed Production, Bio Pesticides / Fertilizers, Vermicompost)	219.00
	Sub Total	1958.00
C	Ancillary activities	
i	Food and Agro processing	1232.00
ii	Agricultural Ancillary Activities - Others (Loans to Farmer Coop. Societies, Agri Clinics / Agri Business Centres, PACS / FSS / LAMPS, MFIs)	863.00
	Sub Total	2095.00
	Total Agriculture	50811.00
II	Micro, Small and Medium Enterprises	
i	MSME – Working capital	56685.00
ii	MSME – Investment credit	116700.00
	Total MSME	173385.00
III	Export Credit	35000.00
IV	Education	12000.00
V	Housing	83700.00
VI	Renewable Energy	439.00
VII	Others (Loans to SHGs/JLGs/Distressed persons to prepay non-institutional credit/PMJDY/State SC/ST organisations)	3096.00
VIII	Social Infrastructure involving bank credit	5132.00
	Total Priority Sector	363564.00

Map of South Goa



Ponda block has been included in South Goa District w.e.f. 23 Jan 2015

District Profile

District - South Goa		State - Goa					
1. PHYSICAL & ADMINISTRATIVE FEATURES*				2. SOIL & CLIMATE			
Total Geographical Area (Sq.km)(incl. ponda)	2239	Agro-climatic Zone	Western Plain and Ghat Region, Coastal region				
No. of Sub Divisions	6	Climate	Warm & humid				
No. of Blocks	7	Soil Type	Sandy & Red Loamy, Coastal Alluvium, Laterite				
No. of Villages (Inhabited - incl. ponda)	187						
No. of Panchayats (Incl.ponda)	88						
3. LAND UTILISATION [Ha]*				4. RAINFALL & GROUND WATER			
Total Area Reported	218905	Rainfall [in mm]	Normal	Actual	2013-14	2014-15	2015-16
Forest Land	93562		3085		3304	3563	2553
Area Not Available for Cultivation	19017		Variation from Normal		219	478	-533
Permanent Pasture and Grazing Land	919	Availability of Ground Water [Ham]		Net annual recharge		Net annual draft	
Land under Miscellaneous Tree Crops	359			5472.55		1836.75	
Cultivable Wasteland	36097					Balance	
Current Fallow	5307					3320.49	
Other Fallow		5. DISTRIBUTION OF LAND HOLDING					
Net Sown Area (NSA)	63644	Classification of Holding	Holding		Area		
Total or Gross Cropped Area (GCA)	76135		Nos.	% to Total	Ha.	% to Total	
Area Cultivated More than Once	12491	<= 1 Ha	23380	73	10777	29	
Cropping Intensity [GCA/NSA]	120	>1 to <=2 Ha	4823	15	8726	23	
		>2 Ha	3926	12	18116	48	
		Total	32129	100	37619	100	
6. WORKERS PROFILE [in '000] census 2011							
Cultivators	16	7. DEMOGRAPHIC PROFILE [in '000] * census 2011					
Of the above, Small/Marginal Farmers	NA	Category	Total	Male	Female	Rural	Urban
Agricultural Labourers	13	Population	640	322	318	227	413
Workers engaged in Household Industries	6	Scheduled Caste	8	4	4	2	6
Workers engaged in Allied Agro-activities	NA	Scheduled Tribe	93	43	48	60	33
Other workers	215	Literate	504	264	238	173	330
		BPL	32	16	16	15	17
8. HOUSEHOLDS [in '000]							
Total Households	189	9. HOUSEHOLD AMENITIES [Nos. in '000 Households]					
Rural Households	54	Having brick/stone/concrete houses	132	Having electricity supply		139	
BPL Households	NA	Having source of drinking water	121	Having independent toilets		116	
		Having access to banking services	124	Having radio/tv sets		115	
10. VILLAGE-LEVEL INFRASTRUCTURE [Nos]							
Villages Electrified	154	11. INFRASTRUCTURE RELATING TO HEALTH & SANITATION [Nos]					
Villages having Agriculture Power Supply	154	Anganwadis	1262 (Goa)	Dispensaries		11	
Villages having Post Offices	74	Primary Health Centres	11	Hospitals		Govt 7+Pvt 46	
Villages having Banking Facilities	36	Primary Health Sub-Centres	85	Hospital Beds		Govt 757+Pvt 1137	
Villages having Primary Schools	154	12. INFRASTRUCTURE & SUPPORT SERVICES FOR AGRICULTURE					
Villages having Primary Health Centres	85	Fertiliser/Seed/Pesticide Outlets [Nos]	114	Agriculture Pumpsets[Nos]		887	
Villages having Potable Water Supply	109	Total N/P/K Consumption [MT](goa)	1597	Pumpsets Energised [Nos]		887	
Villages connected with Paved Approach Roads	65	Certified Seeds Supplied [MT]	31	Agro Service Centres [Nos]			
		Pesticides Consumed [MT](goa data)	30	Soil Testing Centres [Nos]		1	
		Agriculture Tractors [Nos]	166	Plantation nurseries [Nos]		59 (3-govt.)	
		Power Tillers [Nos]	1232	Farmers' Clubs [Nos]		39	
		Threshers/Cutters [Nos]	2216	Krishi Vigyan Kendras[Nos]		1	
13. IRRIGATION COVERAGE [Ha]							
Total Area Available for Irrigation (NIA + Fallow)	17951	14. INFRASTRUCTURE FOR STORAGE, TRANSPORT & MARKETING					
Irrigation Potential Created	14106	Rural/Urban Mandi/Haat [Nos]	3 - mkt.yard	Wholesale Market [Nos]		NA	
Net Irrigated Area(Total area irrigated at least once)	14876	Length of Pucca Road [Km]	1258	Godown [Nos]		6	
Area irrigated by Canals / Channels	4138	Length of Railway Line [Km]	NA	Godown Capacity[MT]		9100	
Area irrigated by Wells	3774	Public Transport Vehicle [Nos] (goa)	114719	Cold Storage [Nos]		6	
Area irrigated by Tanks	14281	Goods Transport Vehicle [Nos](goa)	949180	Cold Store Capacity[MT]		720	
Area irrigated by Other Sources	1164	15. AGRO-PROCESSING UNITS					
Irrigation Potential Utilized (Gross Irrigated Area)	23357	Type of Processing Activity	No of units	Cap.[MT]			
		Food (Rice/Flour/Dal/Oil/Tea/Coffee)	189	na			
		Sugarcane (Gur/Khandsari/Sugar)	1	150000			
		Fruit (Pulp/Juice/Fruit drink)	3	nil			
		Spices (Masala Powders/Pastes)	35	na			
		Dry-fruit (Cashew/Almond/Raisins)	8	5000			
		Cotton (Ginning/Spinning/Weaving)	nil	nil			
		Milk (Chilling/Cooling/Processing)	NA	NA			
		Meat (Chicken/Motton/Pork/Dryfish)	16	na			
		Animal feed (Cattle/Poultry/Fishmeal)	nil	nil			
16. AREA, PRODUCTION & YIELD OF MAJOR CROPS							
		Crop	2015-16		2016-17		Avg. Yield [Kg/Ha]
			Area (Ha)	Prod. (MT)	Area (Ha)	Prod. (MT)	
		Paddy	23790	558970	23496	95926	4083
		Pulses	1328	1768	1331	1047	747
		Cashew nut	19093	365287	19132	7959	416
		Oil Palm	512	263	514	1299	2528
		Mango	3887	15202	3911	7533	1926
		Other Garden crops	2247	5067	2255	24034	10658
		Coconut	16893	84.6 M.nuts	16959	86.98 M.nuts	5129 nuts
17. ANIMAL POPULATION AS PER CENSUS 2012 [Nos]							
Category of animal	Total	Male	Female				
Cattle - Cross bred	7962	998	6964				
Cattle - Indigenous	19496	10059	9437				
Buffaloes	12825	2737	10088				
Sheep - Cross bred	24	13	11				
Sheep - Indigenous	na	na	na				
Goat	7087	na	na				
Pig - Cross bred	4676	na	na				
Pig - Indigenous	19832	na	na				
Horse/Donkey/Camel	22	11	11				
Poultry - Cross bred	7224	na	na				
Poultry - Indigenous	50603	na	na				
18. INFRASTRUCTURE FOR DEVELOPMENT OF ALLIED ACTIVITIES							
Veterinary Hospitals/Dispensaries [Nos]		14	Animal Markets [Nos]		nil		
Disease Diagnostic Centres [Nos]		nil	Milk Collection Centres [Nos]		89		
Artificial Insemination Centers [Nos]		30	Fishermen Societies [Nos]		14		
Animal Breeding Farms [Nos]		1	Fish seed farms [Nos]		nil		
Animal Husbandry Tng Centres [Nos]		1	Fish Markets [Nos]		3		
Dairy Cooperative Societies [Nos]		87	Poultry hatcheries [Nos]		1		
Improved Fodder Farms [Nos]		1	Slaughter houses [Nos]		1		
19. MILK, FISH, EGG PRODUCTION (P.A) & THEIR PER CAPITA AVAILABILITY (for Goa state)							
Fish	Production [MT]	112888	Per cap avail. [gm/day]		21		
Egg	Production [Lakh Nos]	352	Per cap avail. [nos/p.a.]		10		
Milk	Production ['000 litre]	54323	Per cap avail. [gm/day]		105		
Meat	Production [MT]	7852759	Per cap avail. [gm/day]		100		
Sources (if not mentioned against the respective item): Item Nos. 1,6, 7 & 9 - Census 2011; Item 10,11 - Goa at a glance 2013 (DPSE).Item Nos. 2, 3,4, 5, 12, 13,14 & 16 - Agri Dept./Dir. of Eco. & Stat.; Item No. 8 - BPL Survey 2002; Item No. 15 - District Ind Centre; Item No. 17 - AH Census 2012; Item Nos. 18 & 19 - Dir. of Animal Hus./Dir. of Eco. & Stat. * Includes Ponda block							

The geographical area of South Goa District is 2239 Km. South Goa District comprises of 07 talukas with 06 sub –divisions. Margao, the commercial capital of Goa, houses the HQs of South Goa District, headed by a Collector. The number of inhabited villages in the District is 187. There is 01 Zilla Panchayat and 88 Village Panchayats in South Goa, a Panchayat comprising of one village or a group of villages.

South Goa is situated between the latitudinal parallels of 15° 29' 32" N and 14° 53' 57" N and longitudinal parallels of 73° 46' 21" E and 74° 20' 11" E. Arabian Sea is to the west; North Goa district to the North; and Uttar Kannada district of Karnataka in the East and South. Sahyadri Mountains are to the east of South Goa. Around 66% of the District area is covered by forest. Zuari, Talpona, Sal and Galgibag are the rivers flowing in South Goa.

The climate is warm and humid. The District receives rainfall from the South-West monsoon during June-September ranging from 3000 to 3400 mm. The temperature ranges from 17°C to 40°C. Of the Net Sown Area of 63644 Ha, 23% of area is under irrigation. Salaulim Irrigation Project is the only irrigation project with Culturable Command Area of 9537 Ha.

The major food / plantation crops of the District are Paddy, Pulses, Vegetables, Sugarcane, Coconut, Cashew, Arecanut and Mango. Cashew liquor industry is unique to Goa. It is the only State where the cashew apple is commercially used for distilling liquor, popularly known as “Feni.”, for which Geographical Indicator (GI) status has been accorded. The local Goan varieties of Mango viz. Mancurad fetches high price in the local market. Besides, there are a number of minor fruits like kokum, jackfruit, pineapple, jamun, etc., which are grown in Goa, though not on a commercial scale.

It is estimated that there are 16,000 cultivators and 13,000 agricultural labourers in the District. There are around 32129 land holdings of which 88% are cultivated by Marginal and Small farmers. The average land holding of farmers is 1.17 Ha. The cropping intensity is 120%.

South Goa has attained fame for its historical temples, churches, forts and world famous beaches. The district is well connected by road, rail and air. Besides, rivers are used for transportation, especially mineral ores from the mining sites in interiors of the District. National Highways 4A and 17 traverse through South Goa District. The only major port of Goa, Mormugao Port Trust as well as the only international airport (at Dabolim) are located in Mormugao Block of South Goa District. The Konkan and South Western Railway also pass through the District.

The predominant economic activities of the district are mining, tourism, farming and fisheries. The District is endowed with rich natural resources like forests, natural harbor's, navigable rivers and valuable mineral deposits like iron ore and manganese ore. Dairy as an economic activity is picking up in the District. Around 5188 households are engaged in cattle farming. Goa Dairy, a cooperative federal body of Dairy societies, with a processing capacity of 1.10 lakh litres / day is also located in South Goa District, at Curti in Ponda Block.

The Industrial Scenario is also well developed in the District. There are around 1030 registered Micro, Small and Medium Enterprises (MSME) in the District. There are nine Industrial Estates in the district, the prominent one being Verna Industrial Estate in Mormugao Block.

Banking Profile

District - South Goa	State - Goa	Lead Bank - State Bank of India
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1. NETWORK & OUTREACH (As on 31/03/2017)

Agency	No. of Banks/Soc.	No. of Branches				No. of non-formal agencies associated			Per Branch Outreach	
		Total	Rural	Semi-urban	Urban	mFIs/mFOs	SHGs/JLGs	BCs/BFs	Villages	Households
Commercial Banks	36	343	137	206	nil	3	NA	14	0.45	420
State Coop. Bank	1	31	15	16	nil	nil	NA	0	4.97	4645
Primary Agr. Coop. Society	50	50	43	7	nil	nil	NA	0	3.08	2880
Others (Urban Coop. Banks)	12	49	4	45	nil	nil	NA	1	3.14	2939
All Agencies	99	473	199	274	nil	3	NA	15	0.33	304

2. DEPOSITS OUTSTANDING

Agency	No. of accounts					Amount of Deposit [Rs.'000]				
	31-Mar-15	31-Mar-16	31-Mar-17	Growth(%)	Share(%)	31-Mar-15	31-Mar-16	31-Mar-17	Growth(%)	Share(%)
Commercial Banks	1051087	1458546	NA	NA	NA	214946318	269246697	312413810	16.03	92.28
Cooperative Banks	91073	154591	NA	NA	NA	3634883	7368871	8847116	20.06	2.61
Others	259312	286149	NA	NA	NA	9670914	16747139	17281574	3.19	5.10
All Agencies	1401472	1899286				228252115	293362707	338542500	15.40	100.00

3. LOANS & ADVANCES OUTSTANDING

Agency	No. of accounts					Amount of Loan [Rs.'000]				
	31-Mar-15	31-Mar-16	31-Mar-17	Growth(%)	Share(%)	31-Mar-15	31-Mar-16	31-Mar-17	Growth(%)	Share(%)
Commercial Banks	108874	102497	129280	26.13	80.64	51906326	66529146	76664956	15.24	84.76
Cooperative Banks	7654	15748	13609	-13.58	8.49	2847156	4573273	4531719	-0.91	5.01
Others	18425	16362	17424	6.49	10.87	5850812	8865630	9254825	4.39	10.23
All Agencies	134953	134607	160313	19.10	100.00	60604294	79968049	90451500	13.11	100.00

4. CD-RATIO

Agency	CD Ratio		
	31-Mar-15	31-Mar-16	31-Mar-17
Commercial Banks	23.36	24.7	24.54
Cooperative Banks	78.33	62.06	51.22
Others	44.62	52.93	53.55
All Agencies	26.55	27.26	26.71

5. PERFORMANCE UNDER FINANCIAL INCLUSION (No. of A/cs)

Agency	During 2016-17		Cumulative	
	Deposit	Credit	Deposit	Credit
Commercial Banks	na	na	142790	5499
Cooperative Banks	na	na	6576	nil
Others	nil	nil	nil	nil
All Agencies	na	na	149366	5499

6. PERFORMANCE TO FULFILL NATIONAL GOALS (As on 31/03/2017)

Agency	Priority Sector Loans		Loans to Agr. Sector		Loans to Weaker Sections		Loans under DRI Scheme		Loans to Women	
	Amount [Rs.'000]	% of Total Loans	Amount [Rs.'000]	% of Total Loans	Amount [Rs.'000]	% of Total Loans	Amount [Rs.'000]	% of Total Loans	Amount [Rs.'000]	% of Total Loans
Commercial Banks	23368693	30.48	2886106	3.76	2036457	2.66	-	-	8484627	11.07
Cooperative Banks	2825050	62.34	291594	6.43	4481	0.10	-	-	462491	10.21
Others	3674257	39.70	0	0	478362	5.17	-	-	440882	4.76
All Agencies	29868000	33.02	3177700	3.51	2519300	2.79	21700		9388000	10.38

7. AGENCY-WISE PERFORMANCE UNDER ANNUAL CREDIT PLANS (Priority+Non-priority sector)

Agency	2014-15			2015-16			2016-17			Average Ach[%] in last 3 years
	Target [Rs.'000]	Ach'ment [Rs.'000]	Ach'ment [%]	Target [Rs.'000]	Ach'ment [Rs.'000]	Ach'ment [%]	Target [Rs.'000]	Ach'ment [Rs.'000]	Ach'ment [%]	
Commercial Banks	12464855	11679566	93.70	20701626	16312872	78.80	24306530.00	21224308	87.32	86.61
Cooperative Banks	1752162	825563	47.12	2984467	1141923	38.26	2792399	1786074	63.96	49.78
Others	1256103	2479677	197.41	3081241	2275722	73.86	3286390	1724518	52.47	107.91
All Agencies	15473120	14984806	96.84	26767334	19730517	73.71	30385319	24734900	81.40	83.99

8. SECTOR-WISE PERFORMANCE UNDER ANNUAL CREDIT PLANS

Broad Sector	2014-15			2015-16			2016-17			Average Ach[%] in last 3 years
	Target [Rs.'000]	Ach'ment [Rs.'000]	Ach'ment [%]	Target [Rs.'000]	Ach'ment [Rs.'000]	Ach'ment [%]	Target [Rs.'000]	Ach'ment [Rs.'000]	Ach'ment [%]	
Crop Loan	1385380	302084	21.81	2419746	1928261	79.69	1681818	1612100	95.85	65.78
Agri TL + Infra + Ancillary	2168050	918734	42.38	3261328	1209345	37.08	2349069	1802700	76.74	52.07
Total Agri. Credit	3553430	1220818	34.36	5681074	3137606	55.23	4030887	3414800	84.72	58.10
MSME	1694107	1317136	77.75	2865766	2665813	93.02	13647740	10616800	77.79	82.85
Other Priority Sector	10225583	12446852	121.72	18220494	13927098	76.44	12706692	10703300	84.23	94.13
Total Priority Sector	15473120	14984806	96.84	26767334	19730517	73.71	30385319	24734900	81.40	83.99

9. RECOVERY POSITION

Agency	2011-12			2012-13			2013-14			Average Rec. [%] in last 3 years
	Demand [Rs.'000]	Recovery [Rs.'000]	Recovery [%]	Demand [Rs.'000]	Recovery [Rs.'000]	Recovery [%]	Demand [Rs.'000]	Recovery [Rs.'000]	Recovery [%]	
Commercial Banks	4247763	1582526	37.26	4325768	1380013	31.90	6585577	1700515	26	31.66
Cooperative Banks	5471814	5471814	100.00	1381496	1738030	125.81	1277978	1154287	90	105.38
Others	1547588	810921	52.40	1847917	789262	42.71	1231525	780852	63	52.84
All Agencies	11267165	7865261	69.81	7555181	3907305	51.72	9095080	3635654	40	53.83

No RRBs and LDBs in Goa

Source: SLBC website

South Goa District has a very good banking network with a total of 36 Commercial Banks, 01 Cooperative Bank and 12 Urban Cooperative Banks. The total bank branches in the District are 423 of which 343 are Commercial Bank branches, 31 branches are of the Goa State Cooperative Bank (SCB) and 49 branches are of Urban Cooperative Banks.

Goa has a 2 tier cooperative credit structure with 01 SCB and Primary Agricultural Cooperative Credit Societies (PACS). There are 50 PACS in South Goa. Around 65 Urban Cooperative Credit Societies also function in the district. There are no District Central Coop. Banks (DCCBs), Regional Rural Banks (RRBs) and Land Development Banks in Goa. The Lead Bank of the district is State Bank of India with 54 branches.

The total deposits with the banking system as on 31 March 2017 in South Goa are ₹ 33854 crore. Around 92% of the deposits are mobilized by Commercial Banks. Of the total deposits, 23% are NRI deposits. Commercial banks are the major purveyors of credit with a share of 84.76% of the total loans outstanding in the district, ₹ 9045 crore, as on 31 March 2017. The CD ratio of the district is 26.71 % as on 31 March 2017 which is less than the benchmark level of 40%.

The total credit disbursed under priority sector during 2016-17 was ₹ 2473.49 crore against the Annual Credit Plan (ACP) target of ₹ 3038.53 crore, an achievement of 81.40%. The performance under priority sector category is 33 % of the total advances. Of the total achievement, MSME sector was the single largest contributor with 43%, ₹ 1061.68 crore.

The total credit flow to agriculture sector is low at ₹ 341.48 crore. Land title issues, declining interest in agriculture and inability to offer land as collateral are reasons for low credit offtake in Agriculture. The total number of Kisan Credit Cards (KCC) is 2379 with loan accounts outstanding of ₹ 31.99 crore as on 31 March 2017.

As per the Census 2011, 86% of the households have access to banking services. The entire State of Goa is 100% financially included. As per RBI guidelines, rural branches of all the banks have to conduct a Financial Literacy Camp every month to further GoI objective of cashless transactions. Support is available for conduct of such camps from the Financial Inclusion Fund (FIF) of NABARD under the Go Digital initiative.

MUDRA scheme is being actively implemented in the district. As on 31 March 2017, 7582 loans under 'Shishu' category, 4218 loans under 'Kishor' category and 795 loans under 'Tarun' category were sanctioned. The total loan amount sanctioned under MUDRA scheme in South Goa was ₹ 146.85 crore.

The progress under Stand Up India scheme is not encouraging in the District. As on 31 August 2017, 48 applications were sanctioned and 37 disbursed under Stand up India.

As on 31 March 2017, there were 3420 Self Help Groups (SHGs) in South Goa linked to the banking system with a total deposit base of ₹ 160.71 crore. Of these, 1002 were credit linked with a loan outstanding of ₹ 99.25 crore. As on 30 June 2017, there were 625 Joint Liability Groups (JLGs) in South Goa with a loan outstanding of ₹ 15.06 crore.

With the rollout of the new SLBC software, the system of submitting Lead Bank Returns (LBRs) have been discontinued by banks. Owing to this, the subsector-wise data on credit flow for Farm Credit, Agriculture Infrastructure and Ancillary Activities under Agriculture is not available for the year 2016-17. In the new software, the controlling offices of banks upload the data directly on the SLBC website.

Methodology for Preparation of Potential Linked Credit Plans (PLPs)

Potential Linked Credit Plan is a comprehensive documentation of potentials in the district for rural economic activities, both in physical and financial terms. It is also an assessment of the gaps in infrastructure support which need to be filled in to fully exploit the realizable potentials.

Objectives of PLP

The objectives of PLP are

- 1) To enable the various organizations involved in the process of rural development in directing their efforts in a planned manner, in accordance with the potentials available for exploitation.
- 2) To enable optimum utilization of scarce financial resources (specifically bank credit) by channelling the same into sectors with growth potential.
- 3) To assess the gaps in infrastructure support which need to be taken care for exploiting the potentials and prioritise resource requirement for the purpose.

Methodology

NABARD, in 1988-89, took initiative of preparing PLPs for agriculture and rural development. The broad strategy followed by NABARD for the formulation of PLPs envisages estimation of long term potential (in terms of physical units) in each sector of agriculture and rural development with reference to the natural and human resource endowments and a phased annual programme for development, keeping in view the relative national and state priorities. NABARD has been constantly endeavoring to introduce refinements in the methodology of preparing PLPs and improvement of its contents so that the PLPs could be used as support reference document for Annual Credit Plans of banks. NABARD has been reviewing continuously the methodology in estimation of potential through consultative process over the years. It adopts a detailed methodology for assessing the physical potential in major sectors of investment activity conducive to development of agriculture and rural areas. The PLP writers – who are District Development Managers of NABARD placed in most of the districts of the country – are supported by a group of technical officers/experts in the Regional Offices and Head Office of NABARD.

The methodology consists of assessment of sector-wise/subsector-wise estimation of potential in consultation with technical officers of the concerned line departments at the district level, identification of infrastructure facilities required to support the exploitation of the potential, identification of infrastructure facilities available at present as well as planned and working out the gap in infrastructure, examination of the trends in sector-wise credit flow, various schemes of State/Central Govt., and estimation of block-wise physical and financial credit potential.

The indicative unit costs suggested by the State Level Unit Cost Committee (SLUCC) are made use of while arriving at the total financial outlays.

The broad methodology of arriving at the potential for major sectors is given below.

Sr. No.	Sector	Methodology of estimation of credit potential
1	Crop loans	<ul style="list-style-type: none"> • Collection of data on Gross Cropped Area for a period of 10 years and data on land holdings • Distribution of Gross Cropped Area between Small Farmer/Marginal Farmer and Other farmers based on

Sr. No.	Sector	Methodology of estimation of credit potential
		<p>the total land occupied by small and marginal farmers on one hand and other farmers on the other.</p> <ul style="list-style-type: none"> • Make assumption to cover 100% of Small/Marginal Farmers and 20% to 50% of Other Farmers; • Study the cropping pattern • Estimation of credit potential taking into account Scale of Finance and also the KCC guidelines in vogue • Block-wise allocation of potential taking into account credit absorption capacity in a particular block, cropping pattern, etc.
2	Water Resources	<ul style="list-style-type: none"> • MI potential is the area that can be brought under irrigation by ground and surface water; • Collection of data on ultimate irrigation potential, area already brought under irrigation and balance potential available under groundwater and surface water for the district • While fairly clear estimates are available for ground water and its present and future utilization, surface water estimates for individual districts are difficult to get; • Estimation of potential to be attempted block-wise based on categorization of blocks, type of rock formation, suitability of MI structures, projects planned by State Govt. etc. • Preference of farmers for different MI structures like dug wells, bore wells, DCBW, etc. is to be taken into account. • The potential for MI sector is defined in terms of numbers for DW, BW and TW, and in terms of an area for lift irrigation, sprinkler and drip systems.
3	Farm Mechanization	<ul style="list-style-type: none"> • The potential estimate for farm mechanization takes into account irrigated and unirrigated cropped area in the district, economic life of tractor, optimum use of tractor, per acre use of tractor, replacement of tractors per year, assessment of availability of drought animal power/power tiller by using conversion factors; • Calculation of requirement of number of tractors assuming one tractor per 30 acres and 45 acres of irrigated and unirrigated cropped area; • Adjustment of tractor potential with land holdings • Based on the cropping pattern, topography etc. similar assessment is made for power tillers, combine Harvesters etc.
4	Plantation and Horticulture	<ul style="list-style-type: none"> • Estimation of additional area that could be brought under plantation crops based on trend analysis of the land utilization pattern and cropping pattern of the district, area of cultivable waste land likely to be treated and brought under plantation crops;

Sr. No.	Sector	Methodology of estimation of credit potential
		<ul style="list-style-type: none"> Feasibility and possibility of shifting from food crops to plantation crops; Estimation of replanting by taking into account approximate economic life of a few plantation crops Estimation of potential for rejuvenation of existing plantation
5	Animal Husbandry – Dairy	<ul style="list-style-type: none"> Collection of data on number of milch animals as per the latest census Estimation of milch animals for the reference year by assuming 30% calving, 50:50 sex ratio, 40% calf mortality and 50% culling for buffaloes and 40% calving, 50:50 sex ratio, 20% calf mortality and 50% culling for CBCs and 30% calving, 50:50 sex ratio, 20% calf mortality and 50% culling for Indigenous cows; 1/6th of the animals are assumed to be good quality animals and 60% of the good quality animals in milk and 60% of animals in milk are on 2nd and 3rd lactation. 50% of the number of animals so arrived are assumed to be animals available for bank finance.

Utility

Concerted and continuous efforts have been on to make PLPs user friendly keeping in view the stakeholders focus. The document has been useful to various stakeholders in a variety of ways, as illustrated below:

1	Bankers	i. Provides inputs/information on Exploitable potential vis-a-vis credit available ii. Potential High Value Projects/Area Based schemes iii. Infrastructure support available which can form basis for their business/development plans.
2	Government Agencies / Departments	i. Developmental infrastructure required to support credit flow for tapping the exploitable potential ii. Other support required to increase credit flow iii. Identification of sectors for Government sponsored programme
3	Individual / Business entities	i. Private investment opportunities available in each sector ii. Commercial infrastructure iii. Information on various schemes of Govt & Banks.

Limitations and constraints

Though concerted efforts are being made to estimate the potentials realistically, the following limitations and constraints are noticed in the exercise of PLP preparation:

- Non-Availability of accurate granular data on credit flow – Sector and sub-sector-wise;
- Non-availability of data required for estimation of potential in some sectors with the line Depts.

Chapter 1: Policy Initiatives

1.1. Government of India Initiatives for Agriculture and Farmers' Welfare in Union Budget 2017-18

- 1) The target for agricultural credit in 2017-18 has been enhanced to ₹ 10 lakh crore.
- 2) Special efforts will be made to ensure adequate flow of credit to the under serviced areas, the eastern states and Jammu & Kashmir.
- 3) Support to NABARD for computerisation and integration of all 63,000 functional PACS with the Core Banking System (CBS) of District Central Cooperative Banks (DCCBs). This will be done in 3 years at an estimated cost of ₹ 1,900 crore, with financial participation from state governments.
- 4) The coverage of *Pradhan Mantri Fasal Bima Yojana* (PMFBY) will be increased from 30 per cent of cropped area in 2016-17 to 40 per cent in 2017-18 and 50 per cent in 2018-19. The allocation is raised from ₹ 5500 cr to ₹ 13240 cr.
- 5) Government will set up new mini labs in Krishi Vigyan Kendras (KVKs) and ensure 100 per cent coverage of all 648 KVKs in the country. In addition, 1,000 mini labs will be set up by qualified local entrepreneurs.
- 6) Enhancement in the corpus of Long Term Irrigation Fund (LTIF) with NABARD from ₹ 20,000 crore to ₹ 40,000 crore.
- 7) A dedicated Micro Irrigation Fund will be set up in NABARD with an initial corpus of ₹ 5,000 crore, to achieve the goal 'per drop more crop'.
- 8) The coverage of National Agricultural Market (e-NAM) will be expanded from the current 250 markets to 585 APMCs. States will be urged to undertake market reforms and de-notify perishables from APMC.
- 9) A model law on contract farming would be prepared and circulated among the states for adoption.
- 10) A Dairy Processing and Infrastructure Development Fund will be set up in NABARD with a corpus of ₹ 8,000 crore over 3 years for rejuvenating Dairy sector and for creating additional milk processing capacity of 12.6 million LPD. The initial corpus will be ₹ 2,000 crore.

1.2. Reserve Bank of India

- 1) Issue of guidelines on Priority Sector Lending Certificates (RBI Circular RBI/2015-16/366 FIDD.CO.Plan.BC.23/04.09.01/2015-16 dated April 7, 2016 addressed to all SCBs – including RRBs/UCBs/LABs).
- 2) Credit information reporting by banks in respect of Self Help Group (SHG) members – Banks advised to incorporate the SHG member level data into the existing Microfinance data sharing file format (RBI's circular RBI / 2015-16 / 424 DBR. CID. BC. No.104 / 20.16.56 / 2015-16 dated 16/6/2016 addressed to all banks)
- 3) Guidelines for relief measures by banks in areas affected by natural calamities- utilisation of insurance proceeds - In view of the difficulties faced by farmers in areas affected by natural calamities, banks are advised to act with empathy and consider restructuring and granting fresh loans without waiting for the receipt of the insurance claims, in cases where there is reasonable certainty of receipt of the claim (RBI's circular dated 30 June 2016 addressed to all Scheduled Commercial Banks)
- 4) Priority Sector Lending –Targets and Classification- Bank loans to MFIs for on-lending - Qualifying asset - Revised loan limit - The limit of the loans extended by Non-Banking Financial Company - Micro Finance Institutions (NBFC-MFIs) for which the tenure of the loan shall not be less than 24 months, has been raised to ₹ 30,000/- from the earlier limit of ₹ 15,000/-. (Circular RBI / 2016-17 /27 FIDD. CO. Plan. BC. No. 8 / 04.09.001 / 2016-17 dated 28 July 2016)

- 5) Priority Sector Lending status for Factoring Transactions - To increase liquidity support for the MSME sector, it has been decided that factoring transactions on 'with recourse' basis shall be eligible for priority sector classification by banks, which are carrying out the business of factoring departmentally. The factoring transactions taking place through TReDS shall also be eligible for classification under priority sector upon operationalization of the platform (RBI Circular RBI / 2016-17 / 37 FIDD. CO. Plan. BC. 10 / 04.09.01 / 2016-17 dated 11 August 2016 addressed to all Scheduled Commercial banks, excluding RRBs)
- 6) *Deendayal Antyodaya Yojana* - National Rural Livelihoods Mission (DAY-NRLM) – *Aajeevika* - Interest Subvention Scheme (RBI circular RBI / 2016-17 / 42 FIDD. GSSD. CO. BC. No. 13 / 09.01.03 / 2016-17 dated 25 August 2016 addressed to Public & Private Sector Banks)
- 7) 'Doubling Farmers' Income by 2022' – Measures – SLBCs were advise inter alia to Include 'Doubling of Farmer's Income by 2022' as a regular agenda under Lead Bank Scheme in various forums such as SLBC, DCC, DLRC and BLBC. (RBI Circular / 2016-17 / 66)
- 8) FIDD.CO.LBS.BC. No.16 / 02.01.001/2016-17 dated 29 September 2016 addressed to all the Chairman and Managing Directors SLBC Convener Banks/ Lead Banks.
- 9) Operating Guidelines for Small Finance Banks (RBI Circular RBI / 2016-17 / 81 DBR. NBD. No. 26/16.13.218/2016-17 October 6, 2016 addressed to Chief Executive Officers of Small Finance Banks)
- 10) Priority Sector Lending - Revised Reporting System – RBI / 2016-2017 / 79 FIDD. CO. Plan. CO. BC. No.17 /04.09.001/ 2016-17 dated October 6, 2016 addressed to The Chairman/Managing Director / CEO, all Scheduled commercial banks (excluding Regional Rural Banks) to enable effective monitoring.
- 11) Continuation of Interest Subvention Scheme for short-term crop loans on interim basis during the year 2017-18 (RBI Circular RBI / 2016-17 / 308-FIDD. CO. FSD. BC. No. 29 / 05.02.001 / 2016-17 dated 25 May 2017 addressed to all Public and Private Scheduled Commercial Banks)
- 12) Lead Bank scheme –Master circular issued-RBI/2017-2018/8 FIDD. CO. LBS. BC. NO. 1 /02.01.001 / 2017-18 dated 3/7/2017 addressed to all SLBC Convenor Bank / Lead Banks.
- 13) Financial Literacy by FLCs (Financial Literacy Centres) and rural branches - Policy Review – policy on conduct of camps by FLCs and rural branches of the banks has been revised in the wake of recent developments on withdrawal of legal tender status of Specified Bank Notes and the focus on going digital – Financial Literacy by FLCs (Financial Literacy Centres) and rural branches - Revision in funding limits, Audio-visual content and provision of hand held projectors- (RBI/RBI/2017-18/23-FIDD.FLC.BC.No.11/12.01.018/2017-18 dated 13/7/2017)
- 14) Investment in plant and machinery for the purpose of classification as Micro, Small and Medium Enterprises - RBI directed that while calculating the investment in plant and machinery, the original price thereof, shall be taken into account, irrespective of whether the plant and machinery are new or second hand. RBI / 2017-18 /21-FIDD.MSME &NFS. BCNO. 10 / 06.02.31 /2017-18 dated 13/7/2017.

1.3. NABARD

- 1) Encouraging capital formation through allocation of increased share of long term loans in agriculture credit
- 2) Refinement of policies for provision of short term and long term refinance to Cooperative Banks and RRBs for financing seasonal agricultural operations, other non-agricultural short term activities and investment credit.
- 3) Operationalisation of Long Term Irrigation Fund for the funding of central and state shares for the identified projects under *Pradhan Mantri Krishi Sinchayi Yojana*.
- 4) Focussing on policies to enable Doubling of farmers' income by the year 2022

- 5) Promotion of additional 3000 FPOs aimed at aggregation of producers, market linkages and credit expansion to uncovered farmers;
- 6) Financing Producers Organisations through its subsidiary - NABKISAN
- 7) Broad basing the activities for continued support to enhancing livelihood activities of tribals through Tribal Development Fund
- 8) Encourages formation and Nurturing of 'Off Farm Producers Organisations' through "Off Farm Sector Promotion Fund"
- 9) "Outcome based approach" to training of rural youth through RUDSETI/RSETIs
- 10) Continued focus on creation of Rural Infrastructure through RIDF and also through NABARD Infrastructure Development Assistance (NIDA)
- 11) Support to State Government for financing of sprinkler/drip irrigation systems, piped water supply through the "Micro Irrigation Fund"
- 12) Implementation of EShakti project to have a user-friendly accounting system which will digitize their records, assimilate the SHGs with the mainstream banking system and alleviate the drudgery of manual book-keeping
- 13) Mainstreaming of the pilots tested under Livelihood Enterprise Development Programme (LEDP) for promotion of livelihoods among SHG members.
- 14) Promotion of Climate Smart Agriculture
- 15) Support for undertaking activities under the "*Swachh Bharat Yojana*"
- 16) Launching of NABARD All India Financial Inclusion Survey to get deeper understanding of livelihood and financial inclusion aspects of rural households
- 17) Water Campaign with an objective to create mass awareness about the methods of effective conservation / preservation and efficient use of water through available technologies by the rural community.
- 18) Thrust on conversion of KCC to RuPay Kisan Cards to enable farmers to undertake digital financial transactions in the post-demonetization period
- 19) Conduct of special camps on "Going Digital" with stress on digital payments.

1.4. State Government – Budget 2017-18

- 1) Gross budget size of ₹ 16,270 crore in 2017-18 against ₹ 14,694 crore in 2016-17
- 2) Growth rate of 11% projected for 2017-18
- 3) Aim to achieve 6% growth in agriculture sector to make Goa self-sufficient, agriculture commercially viable and to double the income of the farmers by 2022.
- 4) Greater emphasis on horticulture crops such as Coconut, Arecanut, Mango, Cashew, Spices, Floriculture and Vegetable farming.
- 5) Scheme to promote commercial cultivation of mangoes.
- 6) Implementation of modified SSI for new cultivation of sugarcane in an area of 100.00 Ha during 2017-18 with a provision of subsidy of ₹ 10,000/- per Ha.
- 7) MSP of Sugarcane to be increased to ₹ 3000 per ton from present ₹ 2500/- per ton during 2017-18.
- 8) ₹ 172 crore total outlay for agriculture department to implement various schemes.
- 9) Seed bank for preservation of Goan seeds and crops.
- 10) Special policy to protect and preserve the wetlands in Goa.
- 11) Special board for entrepreneurship training and skill development.
- 12) Introduction of *Varaha Palan Scheme* with provision of 60% to 75% subsidy – Piggery Business.
- 13) Provision of ₹ 11593.90 lakh for Animal Husbandry and Veterinary Services Department - ₹ 250.58 lakhs for fodder and feed development, ₹ 800 lakhs for *Kamdhenu Scheme*, ₹ 98.21 lakhs for

piggery development subsidy, ₹ 50 lakhs for *Dudhgram* Yojana, ₹ 574.53 lakhs for tribal area development, ₹ 6596.10 lakhs for dairy development.

- 14) ₹ 100 lakh towards construction and maintenance of landing jetties and ₹ 300 lakhs for corpus fund to fishermen.
- 15) Creation of new Department for Rural Development.
- 16) Construction of Water Treatment Plants - 5.00 MLD Water Treatment Plant at Waddem, Netravali costing ₹ 25.00 crore, 5.00 MLD Water Treatment Plant at Canacona costing ₹ 25.00 crores – to ensure projects will be completed / commissioned by 2020.
- 17) Installation of 100 Dual pump solar powered water supply projects at various locations in the State where there is shortage of water supply.
- 18) Construction of raw water pumping station by laying of mains from Ganjem Bandhara on Mhadei River to Khandepar River at Opa for pumping 60 MLD water.
- 19) Augmentation of Opa water works by enhancing the pumping capacity of water from main canal of Salaulim irrigation project Pajimol to Kale River at Kale village in Sanguem.
- 20) Infusion of Share Capital in the Goa State Cooperative Bank. Provision made of ₹ 20 crore in the 2017-18 budget.
- 21) Establishment of a seed bank for preservation of endemic and endangered germ plasm through the Goa State Biodiversity Board.
- 22) Establishment of a Skill Development Board for formulating a policy and executing the road map for entrepreneurship training and skill development.
- 23) Linking of the *Chief Minister Rozgar Yojana* to incubation centres and entrepreneur development centres.

Chapter 2: Government Sponsored Programmes with Bank Credit

To encourage farmers to take up projects, GoI subsidizes a portion of the Total Financial Outlay (TFO). The aim of the subsidy is to enhance capital investment, generate employment and create a sustained income flow through these projects. Credit support is provided by banks, the subsidy for many of the schemes is routed through NABARD. Subsidy as and when received from GoI is passed onto the financing banks for release to the scheme beneficiaries.

The salient features of the subsidy schemes of GoI / State Government and various promotional programmes of NABARD are given below:

2.1.Details of GoI sponsored schemes routed through NABARD

Sr. No.	Scheme	Nodal Agency	Eligible beneficiaries	Objectives	Nature of support/ assistance/quantum of subsidy
1	Agri Clinics and Agri Business Centres (ACABC)	MANAGE NABARD	Agri / allied graduates, diploma / PG diploma holders, biological science graduates with PG / diploma, intermediate with agri related courses	To provide self-employment opportunities to the unemployed agri graduates and to provide private extension services	Composite back ended subsidy @44% for SC/ST, women and those from NE and hilly areas; subsidy @ 36% for all other categories.
2.a	Capital Investment Subsidy Scheme for Commercial Production Units for organic / biological Inputs	National Centre for Organic farming (NCOF) and NABARD or National Cooperative Development Corporation (NCDC)	Biofertilisers and bio pesticides production Units, Fruit & vegetable waste compost units, Individuals, Farmer Groups, proprietary, and partnership firms, Co-operatives, fertilizer industry, Companies, Corporations, NGOs, APMCs, Municipalities.	Promotion of Organic Farming, increase agricultural productivity, prevent pollution by converting organic wastes into plant nutrient resources, establishing fruit and vegetable waste compost production units, biofertilizer and biopesticide production units.	Subsidy – 25 % with a ceiling of ₹ 40 lakh (For Bio fertilizers - Bio Pesticides Units), 33% with a ceiling of ₹ 66 lakh (for Fruit and Vegetable Waste Compost Units)
2.b	Establishment of Soil Testing Labs (Static / Mobile) / Mini Labs (Component added to scheme at 3(a) above from 2017-18 onwards)	NCOF and NABARD	Fertilizer companies, private industries, individuals, PACS, Farmers clubs and any other entity approved GoI	Improve soil quality and profitability of farmers, Employment generation, Improve timeliness in soil analysis, provide soil testing facilities to farmers at their door step and facilitate state Governments to quickly provide soil health cards to farmers.	STL (Static / Mobile) - 33.33% of cost or ₹ 25 lakh whichever is lower Soil Testing Project at Village level - 40% of cost or ₹ 4 lakh whichever is lower. Mini-soil Testing Lab with ICAR Technology - 44% of Cost or ₹ 0.44 lakh whichever is lower.

2.2. State Government Sponsored Scheme routed through other agency

Sr. No.	Name of the Scheme	Nodal Agency	Objectives	Grants
1	Chief Minister Rozgar Yojana (CMRY)	EDC Ltd. Govt. of Goa	To creating self-employment by providing required infrastructure.	Maximum loan of ₹4 lakh (₹6 lakhs for technical) and 50% share capital contribution under DITC Scheme up to ₹ 2 lakh for non - technical beneficiaries and ₹ 3 lakh to technical beneficiaries.
2	State Rural Livelihood Mission	DRDA, Govt. of Goa	Poverty reduction by building strong institutions of poor, especially women, with provision of financial and livelihood services.	Revolving fund assistance of ₹15,000 per group and interest subvention to the extent of difference between the lending rates and 7% for group loan up to ₹3 lakh.

2.3. Promotional Programmes of NABARD

Sr. No.	Name of the Scheme	Objectives	Grants
1	Promotion of Self Help Groups	To promote and credit link SHGs	Maximum ₹ 10,000 / SHG over a period of 04 years
2	Promotion of Joint Liability Groups	Form and credit link JLGs in project mode	Maximum of ₹ 2,000 / JLG over a period of 03 years
3	Micro Enterprise Development Programme (MEDP)	To promote micro entrepreneurship among matured SHGs.	₹ 50,000/- per MEDP. ₹ 128 / person / day for 2-3 weeks duration
4	Livelihood Enterprise Development Programme (LEDP)	To promote sustainable livelihood options for SHG members through end to end project approach	Grant assistance upto ₹ 6.43 lakh for farm sector and ₹ 4.98 lakh for NFS activities
5	Rural Mart	To facilitate marketing linkages through setting up of retail outlets within the district. To cover the risk involved in initial stages of a rural retail outlet.	Grant assistance of ₹ 2.58 to ₹ 3.45 lakh for setting up the rural retail outlet in the block / district over a period of 02 years.
6	Rural Haat	To provide basic minimum infrastructure to rural haats – trading venues in rural areas	Grant assistance upto ₹ 10 lakh to Gram Panchayats, PACS, POs, NGOs
7	Farmer Club Formation	Development through Credit, Technology Transfer & Value Addition	₹15,000 / year for 03 years
8	Farm Sector Promotion Fund (FSPF)	To promote and disseminate new and innovative technology in agriculture	Project based (90% of the project cost)
9	Off-Farm Sector Promotion Fund (OFSPF)	To promote end to end promotion of off-farm activities	Project based (implemented as loan model or grant cum loan model)
10	Off Farm Producer Organization (OFPOs)	To support technical, managerial and financial support for hand-holding, capacity building and market intervention efforts of the PO.	Grant assistance ranging from ₹ 23.64 lakh to ₹ 43.78 lakh for mini, major and mega OFPOs for formation, share capital contribution and registration of the OFPO

Chapter 3: Credit Potential for Agriculture

According to the revised PSL guidelines issued by RBI, Agriculture Sector is broadly divided into three sub sectors viz, (i) Farm credit (ii) Agriculture Infrastructure and (iii) Ancillary Activities. The basket of activities covered under each of the three sub sectors has also undergone revision and the classification of these activities in PLP document have been aligned according to the latest guidelines.

3.1. FARM CREDIT

Farm credit includes loans to Individual farmers (including SHGs/JLGs) directly engaged in Agriculture and Allied Activities, and loans to corporate farmers, FPOs / companies, partnership firms and co-operatives of farmers directly engaged in Agriculture & allied activities up to an aggregate limit of ₹ 2 crore per borrower.

3.1.1. Crop Production, Maintenance and Marketing

3.1.1.1. Introduction

Agriculture is the third major occupation in South Goa behind Tourism and Mining. The major crops cultivated are Paddy, Pulses, Sugarcane and Vegetables during both the Kharif and Rabi seasons. Vegetable crops like Cucurbits, Lady Finger and Red Amaranthus are also taken up for cultivation following Paddy taking advantage of the residual moisture.

The block-wise distribution of area under the various field crops (Kharif / Rabi) during 2016-17 is as under:

(Area in Ha)

Name of the Block	Paddy	Other Cereals / Pulses / Oilseeds	Sugarcane	Vegetables
Ponda	2891	0	04	690
Sanguem	2020	10	461	165
Dharbandoda	955	01	117	95
Canacona	3340	35	61	735
Quepem	5655	09	127	237
Salcete	7775	746	03	1915
Mormugao	860	530	0	193
	23496	1331	773	4030

Of the 76135 Ha Gross Cropped Area of the District, 29630 Ha (39%) is under the above 4 major field crops. The balance area, 46505 Ha (61%) is under other Plantation, Spice & Garden Crops like Coconut, Arecanut, Pepper, Tree spices (like Nutmeg, Cinnamon), Kokum, Sweet Potato, Mango, Banana, Pineapple and Oil palm. Of the total reported area of 218905 Ha, the Net Sown Area in the District is 63644 Ha (29%). The balance area is classified as forest land, fallow land, permanent pastures, land not available for cultivation, etc. The area sown more than once is 12491 Ha. The Cropping Intensity of the district is thus 120%. The Area (in Ha), Production (in MT) and Productivity (in Kg / Ha) of major crops grown in South Goa District (Kharif / Rabi) during the last three years is as under:

(Area in Ha)

Crop	2014-15			2015-16			2016-17		
	Area	Prod.	Pdty.	Area	Prod.	Pdty.	Area	Prod.	Pdty.
Paddy	23995	106322	4431	23790	99323	4175	23496	95926	4083
Pulses	1343	1268	944	1328	1116	840	1331	1047	747
Sugarcane	684	41662	60910	1020	52008	50989	773	35461	46108
Vegetables	3850	43921	11408	3963	45210	11408	4030	45968	11406

(Source: Dept. of Agriculture)

As seen from above, barring vegetables, the area under the other field crops has remained stagnant / decreased over the years. Vegetable cultivation in the state has been boosted due to the marketing support provided by the State Government through the Goa State Horticulture Development Corporation Ltd (GSHCL). The productivity figures are comparable with the National Productivity levels. The availability of labour, prevailing high wage rates are affecting the growth of agriculture in the District. The cost of land is also quite high in the State.

3.1.1.2. Credit flow to crop production in South Goa District during the last 3 years is as below:

(₹ lakh)

GLC flow	2014-15	2015-16	2016-17
Crop loans	3021.00	19282.00	16121.00

3.1.1.3. Assessment of Credit potential for 2018-19

The credit potential for 2018-19 is assessed as under.

(₹ Lakh)

Sr. No.	Activity	Unit	2018-19			Bank Loan
			SOF	Units	Fin. outlay	
1	Paddy	Ha	0.66	14900	9834.00	9834.00
2	Pulses	Ha	0.40	530	212.00	212.00
3	Sugarcane	Ha	1.58	630	995.00	995.00
4	Vegetables	Ha	0.92	1800	1656.00	1656.00
5	P&H crop maint. (Cashew, Areca, Coconut)	Ha	1.93	2811	4217.00	4217.00
	Total (A)			20670	16912.00	16912.00
B	Post-harvest / Household / Cons. Requirements @ 10% of A				1691.00	1691.00
C	Repairs and Maint. of farm assets @ 20% of A				3383.00	3383.00
	Total			20670	21986.00	21986.00

Activity-wise block-wise credit projections are given in **Annexure I**.

As more than 50% of area is operated by SF / MF, half of the above credit flow, ₹ 10995 lakh is expected to be availed by them.

3.1.1.4. Availability of infrastructure, critical gaps & interventions required

The State Govt. provides attractive subsidy (50-75%) for almost the entire gamut of agricultural operations - from sowing to harvesting. This high rate of subsidy is through convergence of GoI Schemes like *Rashtriya Krishi Vikas Yojana* (RKVY), Mission for Integrated Development of Horticulture (MIDH), Schemes of the Coconut Development Board, etc. with the State Govt. Subsidy Component.

Under Assured Support Price scheme, Paddy, Sugarcane and *Alsando* (local Cowpea) have Minimum Support Prices of ₹ 20/kg, ₹ 3000/ton and ₹ 70/kg respectively. Coconut, Arecanut and Oil Palm are also covered under this scheme. The difference between the price paid to the farmer and the rates indicated above is paid as support price. The Goa State Horticultural Development Corporation Ltd. (GSHDCL), procures vegetables from the farmer at a minimum prefixed rate and markets the same through its outlets - '*Krishi Ghars*'.

The Interest Subvention Scheme (ISS) for 2017-18 has been notified by the GoI under which Short Term Crop Loans upto ₹ 3 lakh are available to the farmers at 4% rate of interest for prompt repayment. The interest subvention is 3% which will be paid through NABARD. All Short Term crop loan accounts will be Aadhaar linked from 2017-18. As part of the 'Sugar Package', 02 schemes of GoI are in operation - Scheme for Extending Financial Assistance to Sugar Undertakings (SEFASU) and

Scheme of Soft Loan to sugar mills to facilitate payment of cane dues. The *Sanjivani Sahakari Sakhar Karkhana Ltd. (SSSKL)*, the sole sugar mill in Goa, is availing of assistance under SEFASU Scheme.

The '*Pradhan Mantri Fasal Bima Yojana*' (PMFBY) is being implemented in the State. The notified crops are Paddy, Pulses, Groundnut and Sugarcane. The premium payable by the farmer is 2% for Kharif and 1.5% for Rabi. The Insurance Co. identified for South Goa District is SBI General Insurance Co. Ltd. Besides, the State Govt. also implements a scheme called '*Shetkari Adhar Nidhi*' which provides compensation to farmers whose crops are affected due to natural calamities and other damages.

The State Government is implementing the e-Krishi project through which Krishi Cards are issued to the farmers. The Krishi Card is mandatory to avail the subsidy schemes of the State Government. Till date, the State Government has issued around 30,000 Krishi Cards. Soil Health Cards have also been issued to around 23000 farmers.

Sustainable Sugarcane Initiative (SSI) Project – *Sanjivani Sahakari Sakhar Karkhana Ltd. (SSSKL)*



Presently SSSKL is running below capacity and has to depend on cane brought in from neighbouring States of Maharashtra and Karnataka and struggles to run to its full capacity. In order to address this issue, a project showcasing the SSI method of Sugarcane cultivation using drip irrigation has been sanctioned to the SSSKL under NABARDs Farm Sector Promotion Fund (FSPF) during 2016-17. The total project cost is ₹ 3.73 lakh.

The project is divided into 02 phases. Under phase I, select group of farmers of coastal blocks of Pernem and Bardez were taken to neighbouring Kudal in Maharashtra State to see how the crop is cultivated even near the sea. The aim is to popularise cultivation of Sugarcane in the coastal tracts of Goa (non- traditional areas) so as to bring new areas under cultivation. In the phase II, 04 demo plots with SSI method of cultivation are developed in farmers' fields (02 each in Pernem and Bardez) and 01 in the SSSKL premises.

In line with the efforts of NABARD, the State Government has also enhanced the assured price for sugarcane from existing ₹ 2,500 per ton to ₹ 3,000 per tonne. Additionally, it has also been proposed to implement modified SSI for new cultivation of sugarcane in an area of 100 Ha with a provision of subsidy of ₹ 10,000 per Ha.

Under FSPF, System of Rice Intensification (SRI) project has also been completed in South Goa District and now the State Government is also incentivizing paddy production through SRI technique. The Package of Practices for Vegetables Grown in Goa and a model for Homestead Farming has also been published by NABARD.

The land holding size is small, production per land unit is less and there is a felt need for aggregation of produce for better marketing strategies and price realization. To achieve this NABARD has

sanctioned 02 Farmer Producer Organizations (FPOs) in South Goa District under the PRODUCE Fund of GoI; one each at Dharbandoda (Registered under Indian Companies Act, 1956) and Rivona. As a business activity, the FPOs have initially started producing Vermicompost and plan to market it through the Goa Bagayatdar Society. Aggregation of the produce of the members is also planned along with setting up of processing facilities for Jackfruit.

Production of seeds and planting material from the 02 Govt. farms at Kalay and Margao is inadequate to meet demand. Usage of Organic Inputs is low. The storage and value addition facilities are also inadequate. Large stretches of land are lying uncultivated due to land title/tenancy/ownership issues. Many of the farmers/cultivators do not have title to the land they are cultivating (Form I & XIV).

3.1.1.5. Suggested action points

The interventions to meet the gap are required for the following:

- i. Production of organic inputs is to be encouraged for maintaining the intrinsic nature and worth of organic cultivation.
- ii. Village level godowns and mini cold storages, need to be established to provide ready storage facilities to enthruse farmers to take up commercial cultivation.
- iii. State Govt. needs to plan for self- sufficiency in seeds of local varieties.
- iv. Govt. has to encourage entrepreneurship in value addition, packaging and grading of Rice, Pulses and Fruit products.
- v. The Krishi Card data needs to be uploaded on the SLBC website so that Bankers have access to the farmer database in the State and to ensure that multiple financing is not done.
- vi. Marketing linkages, preferably at village level are required to be created for linking the producer directly to the retail sale points.
- vii. Govt. also need to consider issuing legally valid tenant cards on the lines of Karnataka Govt. so that tenant cultivators can have access to institutional finance.
- viii. *Reorientation of Govt. support* - Instead of upfront 50 - 75% subsidy rates, incentives linked to production and quality would boost agriculture sector. All subsidy schemes should be made back ended and linked to bank credit to ensure proper end use.
- ix. Coverage of Plantation crops under PMFBY may be considered.

3.1.1.6. Potential for increasing farmers' income

Potential to increase farmer's income is by adopting advanced and efficient methods of crop cultivation like SRI in Paddy and SSI in Sugarcane. Vegetables can be cultivated during the second crop season taking advantage of the residual moisture in the soil. Adopting water saving irrigation structures like drip and sprinkler irrigation also have the potential of reducing the cost of cultivation over a period of time. Fertigation through drips also will save on labour cost and thus enhance the farmer's income.

3.1.2 Water Resources

3.1.2.1. Introduction

Agriculture in the district is dependent on rainfall, dug wells and surface lift irrigation structures. Only 24% of the Net Sown Area (NSA) is under irrigation and Rabi cultivation is completely dependent on irrigation. Average rainfall of the State is about 3085 mm, 90% of which is received from June – September months. The actual rainfall during 2015-16 was 2553 mm as against the normal rainfall of 3085 mm, thereby with a deficit of 532 mm. The water requirement of the State is mostly met through surface water and exploitation of ground water is minimal.

The Central Ground Water Board (CGWB), in their report on “Dynamic Ground Water Resources of Goa State - March 2011” have estimated the net annual ground water availability of South Goa District at 5989 ham (26% ground water development) and all the blocks in South Goa are classified in the ‘safe’ category. There are 2 perennial rivers (Zuari and Galgibag) and 3 ephemeral rivers (Sal, Saleri & Talpona) with a total basin area of 1746 sq. km.

Salaulim Irrigation Project (SIP) is the only Major Irrigation Project in South Goa which caters to the irrigation needs of Sanguem, Quepem and Salcete talukas. It also provides raw water for domestic and industrial use to Mormugao, Sanguem, Quepem and Salcete talukas to the extent of 260 MLD. The Irrigation Potential created by SIP is 14106 Ha with a CCA of 9537 Ha. Of the Potential Created only 3915 Ha has been utilized upto September 2016. A scheme for SCADA and Telemetry at SIP is completed which helps in getting complete automation of data collection and transmission.

There are no medium irrigation projects in the District.

There are two Minor Irrigation (MI) tanks in South Goa District - Chapoli in Canacona taluka and Panchwadi in Ponda taluka. These tanks have a combined storage of 20.89 mcm and supply about 35 MLD for drinking water. Gavnem MI Tank in Canacona taluka, planned to serve the ST community, is nearing completion. Besides irrigating 100 Ha, the tank has a water supply component of 5 MLD for domestic use. The command area of the tank falls in the Gavnem, Tollem, Saturlim and Fulamol villages of Canacona taluka. Minor Irrigation Tank at Karvan (Canacona) with an estimated cost of ₹ 110.00 crore is proposed to be taken up.

The Goa State Water Policy 2015 has been prepared and is in the final stages of approval. The District Irrigation Plan under Prime Minister ‘*Krishi Sinchayi Yojana*’ (PMKSY) to achieve the objective of ‘*per drop more crop*’ is also under finalization.

3.1.2.2. Credit flow in the last three years

Credit flow data, exclusively on Water Resources, is not available for want of appropriate codes in LBR.

3.1.2.3. Assessment of Credit potential for 2018-19

The physical and financial projections for 2018-19 is as under:

(₹ Lakh)

Sr. No.	Activity	Unit size	Unit cost	2018-19		
				Units	Fin. outlay	Bank loan
1	Dug wells (dia 3m, depth 8-10m)	No.	1.76	660	1162.00	871.00
2	Pumpsets 5HP 3 phase, submersible	No.	0.30	650	195.00	146.00
3	Drip (Coconut)	Ha	0.40	770	308.00	231.00
4	Drip (Banana)	Ha	1.00	115	115.00	86.00
5	Sprinkler (Areca nut)	Ha	0.50	250	125.00	94.00
6	Small LIS (Pumpsets, pipes)	No.	1.40	325	455.00	341.00
7	Deepening of existing wells	No.	0.53	510	270.00	203.00
8	Misc. works			0	0.00	305.00
	Total			3280	2630.00	2277.00

75% of TFO is considered as bank loan. Block-wise credit potentials are given in **Annexure I**.

3.1.2.4. Availability of infrastructure, critical gaps & interventions required

The State has been successfully implementing a scheme for *post monsoon water harvesting for groundwater recharge* through construction of a series of Bandharas across rivers and nallahs in the sweet water zones. These Bandharas build up cascading storages along the river courses. Besides helping build up groundwater level in the aquifers storages created by the Bandharas also help meet the growing water requirement of the State through augmentation of water supplies to water treatment plants, especially during the lean season. Under the Salaulim Irrigation Project (SIP), an area of 4750 Ha has been covered under Field Channels, 2701 Ha under Warabandi and 326 Ha under levelling in the command of the SIP. 7696 farmers have also been trained under the CADA project.

Three talukas of South Goa - Canacona, Sanguem and Dharbandora have been brought under Western Ghats Development Programme (WGDP). Minor irrigation schemes with shorter gestation periods such as open wells, tube wells, bore wells, lift irrigation schemes, tanks and Bandharas are undertaken under WGDP to serve these hilly areas. The potential created under the WGDP is 4224 Ha and potential utilized is 3591 Ha as on September 2016.

The projects ongoing in the District are as under:

- (i) Construction of barrage and upgradation of raw water pumping station at Ganjem on Mhadei river for augmentation of raw water for Opa water works and lift irrigation schemes on Mhadei river at an estimated Cost ₹ 100.10 crore. The Ganjem RDWS project has been sanctioned under NABARD's RIDF.
 - (ii) Pumping of water from main canal of SIP Project from Pajimol village to Kalay River at Kalay village in Sanguem Taluka for augmentation of Opa Water Works.
 - (iii) Stabilisation of slope with rock bolt and PCC retaining wall at Tariwada, Mormugao Constituency at a cost of ₹ 4.59 crore.
 - (iv) Maintenance and repair of internal bunds in Goa state under RKVY at Kolyakhazan and Mhadge bund in V.P. Poinguinim in Canacona Taluka at a cost of ₹ 2.58 crore.
 - (v) Development of Peddem Gal Nallah in V.P. Loliem in Canacona Taluka, Phase I – ₹ 1.83 crore.
- In addition, the Augmentation of LIS at Naikaband in Sanguem block has also been sanctioned by NABARD under RIDF.

The Water Resources Department (WRD) implements Surface Water schemes. The WRD provides 50% subsidy (max. ₹ 75,000) on the cost of construction of a dug well. Under the National Mission on Micro Irrigation, 70% subsidy is provided for sprinkler and 90% for drip irrigation systems (including state govt. subsidy). The WRD also provides 50% subsidy for construction of roof top rain water harvesting schemes of individuals, residential and commercial complexes. Registration of wells is in progress. Government has issued a notification in order to encourage compulsory registration of wells. The State Government has introduced the "**Nital Baim Scheme**" from this year under which financial assistance of ₹ 50,000/- will be provided for repair / renovation of existing registered wells which are used for drinking / irrigation purpose. Solar pumps are not much used due to their high initial cost and easy availability of electrical power. Use of diesel pumps is also seen to a limited extent.

3.1.2.5. Suggested action points

The interventions still required in the district are

- (i) As the State receives, abundant rainfall, rainwater harvesting needs to be popularised to recharge the groundwater.
- (ii) The canals networks in the district need to be completely overhauled by taking all the stakeholders into confidence. Water Users Associations also need to be activated.
- (iii) Tail end distributaries are required in command areas.
- (iv) The canals, tanks and natural springs need to be repaired / desilted.

(v) Popularisation of the micro irrigation systems (drip / sprinkler) in place of flood irrigations for water conservation.

(vi) Flood protection measures in coastal areas to check field inundation / salinity ingress is required to be done to prevent erosion.

The State Water Policy as well as the District Irrigation Plan needs to be finalised and implemented at the earliest.

3.1.2.6. Potential for increasing farmers' income

Water saving measures by farmers will not only help in saving water, but also savings in input costs and reducing land degradation. This would help in increasing the farmer's income. Use of Drip irrigation in Sugarcane will also help in efficient use of water.

3.1.3 Farm Mechanization

3.1.3.1. Introduction

In Goa, agriculture operations face issues of labour shortage, coupled with high labour costs. This has prompted use of farm machinery among farmers. The attractive state government subsidy schemes on the farm implements has also contributed to the farm mechanization. The cropping pattern is dominated by paddy followed by vegetables/ pulses and sugarcane, which provides scope for farm mechanization. Farm machinery commonly used are power tillers, tractors, trailers, land levelers, rotavators, weed / brush / chaff cutters, sugarcane crushers, threshers and combine harvesters.

The dealers are registered with Agriculture Dept. There are 24 Govt. owned tractors (35 HP and more) and a 4-wheel paddy transplanter owned by private agency in the District. Besides, 52 mini tractors (<18 HP), 1232 power tillers, 90 tractors, 443 mini tillers are operating in the District. 18 private owned combine harvesters are also operating in the District. (Source: Dept. of Agriculture - March 2016). There are two Govt. owned agro service centres and a Mitsubishi tractor service center in South Goa.

3.1.3.2. Credit flow in the last three years

Credit flow data, exclusively on this sector is not available for want of appropriate codes in LBR.

3.1.3.3. Assessment of Credit potential for 2018-19

The physical and financial credit potential for farm mechanization is assessed below.

(₹ Lakh)

Sr. No.	Activity	Unit	Unit cost	2018-19		
				Phy. Units	Fin. outlay	Bank loan
1	Tractor (40-45 HP) with trolley (3 MT mechanically operated)	No.	7.40	100	740.00	555.00
2	Power tillers (8 HP and above)	No.	1.67	415	693.00	520.00
3	Rice transplanters 4 wheel self-propelled	No.	12.10	7	85.00	64.00
4	Paddy Transplanters Manual	No.	2.75	32	88.00	66.00
5	Combine harvesters	No.	25.85	7	181.00	136.00
6	Sprayers	No.	0.06	650	39.00	29.00
7	Weeders	No.	0.44	630	277.00	208.00
8	Motorised threshers	No.	0.41	160	66.00	49.00
9	Other Implements*	No.	0.97	4000	3880.00	2910.00
	Total			6001	6049.00	4536.00

* (rotavator, coconut dehusker, MB plough, areca peeler, cashew pulper, etc.)

As Credit linkage is not compulsory for availing subsidy, and collateral is required for loans exceeding ₹ 1 lakh, the scope for credit flow to farm mechanization is limited.

Block-wise credit potentials are given in **Annexure I**.

3.1.3.4. Availability of infrastructure, critical gaps & interventions required to be addressed

The State Government standardizes the rates of machinery sold by dealers and provides subsidy ranging from 50-90% on the implements. 90% subsidy is provided to SC/ST farmers for purchase of new agricultural machinery and 75% subsidy for attachments to self-propelled machine. Whereas 75% subsidy is provided to general category farmers for purchase of agricultural machinery and 50% subsidy is provided for implements and tools. The Govt. also provides 50% subsidy on custom hiring for tillage operations in Paddy, Pulses, Groundnut and Sugarcane. For Harvester purchase, subsidy is provided only to farmer's groups and societies. Subsidy @ ₹ 7000 per Ha is also available for promotion of transplanting paddy by mechanized method. There is also a scheme for upkeep and maintenance of machinery belonging to registered agencies on completion of 500 Hrs work in one calendar year @ ₹ 40,000 per annum. A onetime assistance of ₹ 15,000 per Ha or 50% cost, whichever is less is given for removing shrubs, bushes, weeds using power driven machine.

The factors limiting farm Mechanization are the Small Holding sizes, undulating and inaccessible terrain – difficult to mechanize and the presence of only few commercial farmers. In plantation crops, there is very low rate of mechanization. In cashew there is almost no mechanization except spraying, Operations needing mechanization are tree removal and pit and trench making, trimming and pruning, foliar sprays for nutrients and pesticides, harvesting, drying and processing. In Coconut - Harvesting, dead leaf and sheath removal need to be mechanized. For Arecanut - harvesting, replanting of improved varieties, drying and processing need mechanization.

3.1.3.5. Suggested action points

- (i) The mechanization of operations in Plantation crops needs to be popularized.
- (ii) Proper sensitization and training to promote mechanization needed.
- (iii) Provisions for proper spares & servicing centers and on farm training to users.
- (iv) Demonstrations for model mechanized plantations.
- (v) Subsidy schemes have to be linked with credit, back-ended and with appropriate lock-in period.
- (vi) Development of skilled local manpower for operating machinery.

3.1.3.6. Potential for increasing farmers' income

Farm Mechanization helps in reducing the cultivation costs by saving labour and thus contributes directly to increasing the farmer income. The needs of the small farmers through promotion of efficient equipment's and tools and small engine driven tractors is the need of the hour. Development of an efficient custom hiring facility in farm mechanization should be given high focus. The PACS in the State can also engage in custom hiring of farm machinery.

3.1.4 Plantation and Horticulture

3.1.4.1. Introduction

The major P&H crops in the District are Mango, Cashew, Coconut, Banana, Pineapple, Chickoo, Jackfruit, Papaya, Arecanut etc. A variety of spices like Black Pepper, Nutmeg, Kokum, Cardamom, Ginger, Turmeric, All Spices, Cinnamon, Clove, etc. are also grown. Floriculture as commercial activity is also catching up in the State. The State Government is promoting high value flowers like orchids,

gerbera and anthurium and has plans to set up Floriculture Estates with enabling provisions being made in the upcoming State Agriculture Policy. Identified species of Medicinal and Aromatic Plants like *Stevia*, *Aswagandha* are encouraged for cultivation by the Forest Department. Dr. Kurades Mushrooms produces a wide variety of Mushrooms in the State. Button mushrooms are being produced commercially by M/s. Zuari Agro foods.

The area under cultivation of different fruits, vegetables and plantation and horticulture crops and their production in South Goa during last three years are below:

Sr. No	Name of the crop	2014-15			2015-16			2016-17		
		Area (Ha)	Avg. yield (kg/ha)	Prod. (MT)	Area (Ha)	Avg. yield (kg/ha)	Prod. (MT)	Area (Ha)	Avg. yield (kg/ha)	Prod. (MT)
1	Cashewnut	18724	446	8351	19093	310	5919	19132	416	7959
2	Arecanut	1270	1654	2101	1287	1660	2136	1295	1702	2204
3	Pepper	490	320	157	499	330	165	526	361	190
4	Tree Spices	127	30	4	135	35	4.8	143	40	6
5	Mango	3866	1835	7094	3887	1220	4742	3911	1926	7531
7	Banana	1450	11295	16378	1462	11310	16535	1470	10870	15978
8	Pineapple	257	16580	4261	266	16595	4414	269	16580	4460
9	Coconut *	16875	4955	83.6	16893	5010	84.6	16959	5129	86.98
10	Oil palm	507	2460	1247	512	2470	1265	514	2470	1265
11	Other garden crops	2217	10665	23644	2247	10680	23998	2255	10680	23998
12	Vegetables	3850	11408	43921	3963	11408	45210	4030	11408	45210
	Total	49633			50244			50504		

(Source: Dept. of Agriculture)

* Coconut Production in Million Nuts and Productivity in Nuts / Ha

P&H crops occupy about 66% of the total cropped area. The production and productivity of most of the crops have remained static over the years. Favourable climatic conditions had increased the production of Cashew and Mango during 2016-17. There is limited scope for expansion of the area under these crops. Being a tourist destination and a state with good living standards and purchasing power, horticulture products have a very good local market.

3.1.4.2. Credit flow in the last three years

Credit flow data, exclusively on P&H, is not available for want of appropriate codes in LBR.

3.1.4.3. Assessment of Credit potential for 2018-19

The physical & financial projections for P&H during 2018-19 has been estimated as under:

(₹ Lakh)

Sr. No.	Activity	Unit size	Unit Cost	2018-19		
				Phy. Units	Fin. outlay	Bank loan
1	Cashew	Ha	1.35	1075	1451.00	1088.00
2	Cashew rejuvenation / replanting	Ha	0.34	1225	417.00	312.00
3	Coconut	Ha	1.88	595	1119.00	839.00
4	Coconut - Hybrid	Ha	2.45	145	355.00	266.00
5	Mango	Ha	1.72	305	525.00	393.00
6	Oil palm	Ha	1.10	150	165.00	124.00
7	Arecanut	Ha	2.97	110	327.00	245.00

Sr. No.	Activity	Unit size	Unit Cost	2018-19		
				Phy. Units	Fin. outlay	Bank loan
8	Spices (pepper as a mixed crop)	Ha	1.16	117	136.00	102.00
9	Spices - nutmeg (mono crop)	No.	0.92	80	74.00	55.00
10	Vegetables (Polyhouse) 1000 sqm	No.	11.83	31	367.00	275.00
11	Vegetables (shade net) – 1000 sqm	No.	3.99	32	128.00	96.00
12	Polyhouse (gerbera) - 640 sqm	No.	8.94	28	250.00	188.00
13	Others (Kokum, Cocoa, etc.)	No.	3.08	130	400.00	300.00
14	Nursery - planting matl. and ornamental	No.	3.47	31	108.00	81.00
15	Oyster mushroom		2.31	14	32.00	24.00
16	Homestead farming - 1000sqm	No.	0.46	280	129.00	97.00
	Total			4348	5981.00	4486.00

Block-wise credit potentials are given in **Annexure I**.

3.1.4.4. Availability of infrastructure, critical gaps & interventions required

Mission for Integrated Development of Horticulture (MIDH) and State Govt. support are clubbed to subsidize various activities of the P&H crops. Subsidy assistance @ 50 – 90% is available for the farmers. 75% subsidy with upper limit / Ha is available for cultivation of bulbous and loose flowers. During 2017-18, the State Government has notified a scheme for development of Mango Orchards with a maximum subsidy assistance of ₹ 2 lakh per Ha, the area cap being 5 Ha. 50% subsidy is available for rejuvenation / replacement of senile cashew plantations with a cap of ₹ 20,000 per Ha. Assistance is also available for cultivation of coconut – Tall and hybrid varieties.

100% subsidy assistance on structure is available for cultivation of Vegetables in Polyhouses / Shade Nets. Further the GSHCL procures notified vegetables at pre-fixed rates assuring income to the farmers. A kitchen garden scheme is also being implemented in about 90 schools of the State. Assured price scheme is present for Arecanut, Coconut, Cashewnut and Oil Palm. Assistance for production of honey and promotion of traditional tribal occupations in a scientific manner is also available under MIDH.

Planting material is procured by farmers from the Govt. farms at Kalay and Margao, Goa Bagayatdar and from 112 registered private nurseries. There are nine cashew processing industries in the District. Cashew is imported from other States / African countries to keep the factories running throughout the year. Commercial processing of coconut is limited to oil extraction for domestic consumption. There are only six units in the district dealing with desiccated coconut powder, oil, toddy and vinegar.

Lack of availability of quality planting material, limited value addition, inadequate warehouse / cold storages, lack of awareness of latest technologies, etc. are the common gaps encountered in the promotion of P&H sector in the State. There is good scope for value addition of minor fruits like Jackfruit and Kokum which otherwise are left to rot on the trees or fall to the ground. NABARD has organized 02 capacity building programmes on processing avenues available for these 02 fruits in association with the Goa Chamber of Commerce and Industry (GCCCI) and the Western Ghat Kokum Foundation (WGKF). Interested farmers were also taken on an exposure visit to Kudal in Maharashtra State to have a firsthand experience of the processing facilities and equipment's required. Innovative products like Jaffee (Jackfruit Coffee), Raw Vegetable Frozen jackfruit, Kokum Concentrates are being produced commercially in other Southern States like Kerala and Karnataka and the produce is marketed in outlets in North India, where they are a delicacy and much in demand.

3.1.4.5. Suggested action points

- 1) Support to local nurseries for production of quality planting material.
- 2) Setting up of block level mini cold storages.
- 3) Branding and marketing of the horticultural produce.
- 4) Support price should also be considered for flowers produced in the State.
- 5) Facilitation of organic certification for the horticultural produce.
- 6) Produce aggregation, value addition and marketing through FPOs.
- 7) Promotion of homestead farming in a systematic manner

3.1.4.6. Potential for increasing farmers' income

P&H activity offers tremendous scope for increasing the farmer's income in Goa. Cultivation of specialized vegetables in controlled environment / hydroponics is gaining popularity and exotic vegetables / salad vegetables are being produced in the State. These hi-tech methods of cultivation have allowed cultivation to be taken up vertically thus limiting the pressure on land which is a scarce / fast depleting resource, as far as agriculture is concerned.

The productivity of Cashew / Coconut can be increased by culling old trees, replanting, adopting proper agronomic management practices and pest control. Intercropping with ginger, turmeric and pepper will fetch additional revenue for coconut and areca farmers. Scope for Banana has not been fully explored yet and could be promoted with marketing arrangements as it is a high value crop. Aggregation and value addition of minor fruits like kokum, noni and jackfruit has good scope for increasing farmers' income. Goan Plantation Crops are by default organic, if certified so, there is potential to market as organic produce thus increasing the revenue earned manifold. There is Potential for development Agro - Eco tourism projects which can supplement the income of the farmers.

The State Government is also planning to give a "BIG" push to Goan Agriculture by branding the agricultural produce under the State brand – BIG – Born in Goa. Through this a brand image will be created and promotion / marketing done all over the country / globe at premium prices. An IT platform "AGRICLOUD" is also proposed which will introduce the farmer / producer to the buyer of the produce.

Apiculture has the potential to enhance the farmer's income through production of honey in addition to increasing the productivity of crops through pollination. Aggregation of the produce through formation of Farmer Producer Organizations (FPOs), setting up of exclusive Farmers Market will also increase the income of farmers by providing appropriate marketing avenues.

3.1.5 Forestry and Waste Land Development

3.1.5.1. Introduction

As per the State of Forest Report 2015 published by the Forest Survey of India, the forest cover of the State is 2219 sq. km., 60% of Geographical Area. The estimated tree cover in the State is 334 sq. km. and the area under mangroves is 26 sq. km. Forests of Goa are a part of the internationally recognized biodiversity hotspot – the Western Ghats and are rich in flora and fauna. The Forest Cover in South Goa District is 1296 sq. km mostly concentrated in Sanguem, Dharbandora and Canacona blocks. In South Goa, there are three wild life sanctuaries and one national park.

The primary forest species in the district are Teak, Eucalyptus, Bamboo, Casuarina, and plantation crops like Cashew, Rubber, etc., planted by the Govt. The produce from the forests are timber / wood based mostly originating from private forests. Goa Forest Development Corporation (GFDC) manages

8590 Ha of cashew plantations and 362 Ha of rubber plantations in forest lands. The right to collect cashew is auctioned out to individuals annually and to SHGs for a five-year period.

GFDC also maintains a pilot apiary in Canacona. Medicinal plant gardens have also been established for demonstration purpose in the botanical gardens at Canacona, Sanguem and Quepem ranges. Under National Bamboo Mission, a Bamboo Mission Society has been formed and two nurseries have been established in South Goa.

3.1.5.2. Credit flow in the last three years

Credit flow data, exclusively on this sector is not available for want of appropriate codes in LBR.

3.1.5.3. Assessment of Credit potential for 2018-19

The credit potential for forestry & water land development for 2018-19 is as under:

(₹ Lakh)

Sr. No.	Activity	Unit	UC	2018-19		
				Phy. Units	Fin. outlay	Bank loan
1	Teak	No.	0.70	92	64.00	48.00
2	Bamboo	No.	0.80	75	60.00	45.00
	Total			167	124.00	93.00

Block-wise credit potentials are given in **Annexure I**

3.1.5.4. Availability of infrastructure, critical gaps & interventions required

There are 38 Govt. nurseries at Sanguem, Dharbandora, Quepem, Canacona, Salcete and Ponda which cater to the needs of Forest Department. GFDC also takes up rejuvenation of senile plantations, replacement with grafts, etc. GFDC has its own nurseries, three of which are located in Sanguem, Canacona and Quepem for raising grafts. There is steady demand for cashew grafts.

Revenue generated through the sale of Forest produce is ₹ 7.57 lakh and through Eco-tourism activities and other means is ₹ 220.24 lakh during 2016-17. Cutting of trees is regulated in private land under the Preservation of Trees Act, 1984. Felling of trees is banned in Govt. forests and damaged or uprooted trees only could be sold. For private forests, tree felling requires permission from the Dept. Further, licensing is required for transporting the produce within Goa or outside the State.

The effects of climate change are observed in the District in the form of changes in rainfall pattern, extreme day temperature levels. This could have an adverse effect on the flora and fauna of the forests. Since, the forests are lying in the bio diversity rich Western Ghats, the Govt. has constituted a Biodiversity Board as a conservation measure.

3.1.5.5. Suggested action points

Private forest owners need to be encouraged to take up farm forestry activities by streamlining the procedures need for felling / transportation of the forest produce. The produce may be linked to established wood-based industries in the state. Bamboo should be promoted and skill based trainings offered to the cultivators / local artisans in wood and bamboo based products. There is also a need to establish market for forest timber/bamboo/wood based produce in the State.

3.1.5.6 Potential for increasing farmers' income

Forests provide a wide range of economic and social benefits to humankind. These include employment, processing and trade of forest products and energy – and investments in the forest sector. They also include the hosting and protection of sites and landscapes of high cultural, spiritual or recreational value (eco-tourism units) located in the forests. Forestry activities supplement the income of the farmers. The collection and sale of minor forest produce is an important source of income for tribals and people living in the periphery of the forests. This activity can be sustained with conservation of forests and afforestation. Agroforestry can be practiced on field bunds, Apiculture (Organic Honey) can be taken up in the forest areas with concurrence of the forest department. In addition, the barren / wastelands / comunidade lands in the district can be exploited by way of commercial forestry plantations.

3. 1.6 Animal Husbandry - Dairy

3.1.6.1. Introduction

Animal Husbandry activities play an important role in the economic upliftment of those living in the rural areas, as many families take up animal husbandry as a subsidiary occupation for additional income. This sector provides nutritious food of animal origin. It is an important component of integrated farming models and provides stimulus for organic farming. Compost and Biogas are important by-products. As per the last Livestock Census (2012), the total livestock population of the district is 2,23,202, of which the bovine population is 40,283 as detailed below:

Particulars	Cows		
	Male	Female	Total
Cross bred cattle	998	6964	7962
Indigenous cattle	10059	9437	19496
Buffalo	2737	10088	12825
Total	13794	26489	40283

Among the Cross Bred Cows, Sahiwal and Jersey are popular, while for Buffaloes, the Murrah breed is preferred. As per the latest livestock census, 5188 households are engaged in cattle farming, while 1836 households are involved in buffalo rearing. The State does not have recognized breeds of cattle or an organized cattle market. Nearly, 70% of available cattle are local and non-descript breed. Goa is the only State which provides for a milk incentive of ₹ 10 per litre of milk to the dairy farmers.

Goa produces less than half the quantity of milk it consumes. While the requirement is 3.30 lakh litres a day, the estimated production is only 1.61 lakh litres per day. The supply from outside the State is 18618 litres per day. To control the inflow of outside milk, State Govt. levies a cess of 15p/litre.

Goa Dairy is the premier cooperative (federal body of dairy societies) in the State with a processing capacity of 1.10 lakh litres/day. There are 94 Milk Societies in South Goa affiliated to Goa Dairy. The milk procurement by Goa Dairy is 64,000 litres per day. During 2015, SUMUL (Gujarat based cooperative) was granted permission for procuring milk. SUMUL procures around 2654 litres per day. Goa Dairy has a 49% share in the milk market. Remaining 51% of market share is enjoyed by 31 private milk brands from outside the State. Goa Dairy operates a 100 MT/day capacity feed mixing unit at Usgaon, Ponda. The cost of production is high due to non-availability of raw materials for feed, such as maize and bajra, which if cultivated locally, could bring down the production cost.

3.1.6.2. Credit flow in the last three years

2016-17 credit data, exclusively on AH - Dairy, is not available for want of appropriate codes in LBR.

3.1.6.3. Assessment of Credit potential for 2018-19

Dairying is a profitable main/supplementary occupation for farmers in the State and has a high credit flow potential for bankers. The estimated credit potential for 2018-19 is as under:

(₹ Lakh)

Sr. No.	Activity	Unit	UC	2018-19		
				Phy. Units	Fin. outlay	Bank loan
1	CB Cows (2 animals unit)	No.	1.47	970	1571.00	1179.00
2	Graded buffaloes (2 animals unit)	No.	1.47	135	219.00	164.00
3	Calf rearing (5 animal unit)	No.	2.76	190	578.00	433.00
4	Mini Dairy (10 animal unit)	No.	7.35	35	283.00	212.00
5	Community dairy (100 animals)	No.	100	14	1540.00	1155.00
6	Misc. (Shed repair/extn.)	No.	0.25	140	39.00	29.00
	Total			1484	4230.00	3173.00

Block-wise credit potentials are given in **Annexure I**.

3.1.6.4. Availability of infrastructure, critical gaps and interventions required

The State Govt. is implementing 10 schemes for dairy development, viz., *Kamdhenu Scheme (Sudharit)*, revised modern dairy scheme, Scheme for Cattle Feed Subsidy, Scheme for Incentives to Milk Producers, Pashupalan Scheme, Green Fodder Scheme, Dairy Equipment Scheme, Infrastructure Devt. Scheme, Dairy Kit Scheme, Community Dairy Scheme and Stray Cattle Management Scheme. The Sudharit Kamdhenu Scheme is the most popular scheme (40-90% subsidy range) and it is credit linked back ended scheme with a lock-in period of three and half years. During the year 2016-17, 1377 animals were purchased under the scheme, the total subsidy outgo being ₹ 7.51 Crore. Since implementation, 9249 animals have been added under the scheme.

Community Dairy Scheme is also picking up in the District. The Pashupalan Scheme has been formulated by combining the three schemes – Breeding of local cows, Special Calf rearing Scheme and Special Livestock Breeding Programme – and offers 75% subsidy to General and 100% to SC / ST / Dhangar Community. Calf feed subsidy is given to farmers to rear female Cross Bred Cows and improve buffalo calves from 01 to 27 months. A Mobile Veterinary Clinic equipped with portable Ultra Sound machines has been commissioned in South Goa to provide timely Veterinary services with advanced diagnostic facilities at the door step of the farmers.

There is 1 main veterinary hospital, 13 veterinary dispensaries and 30 key village sub centres in the district manned by 14 Veterinary Doctors and 25 Para Veterinary Staff. Four emergency veterinary centres (1 in South Goa) and 161 first aid centres operated by Goa Dairy efficiently supplement the services. The number of dispensaries / AI Centres are more than adequate for the district. According to the Animal Husbandry Performance Report 2017-18, the State Government aims to acquire elite animals and semen with known high dairy genetic characteristics so that local non-descript animals are slowly replaced with genetically upgraded animals, thereby increasing local milk production. The aim is to bring 50% indigenous and 50% exotic germplasm level in the cattle population of the State.

In South Goa, there is a livestock farm at Mollem and a fodder seed production farm at Kalay, Sanguem. Ban on cow slaughter is prevalent in Goa. Culling is permitted only at the State Government run Goa Meat Complex located in Usgaon, Ponda. The Meat complex has a capacity of slaughtering 150 bovines / shift. During 2016-17, the State Government has done the Modernization of Meat Processing Plant

of the Goa Meat Complex Ltd at Usgaon at a total cost of ₹ 13.00 crore for supply of hygienic meat to the consumers. The common issues noticed are acclimatization problems for the imported animals, low milk yields, infertility and disease, perennial deficit of availability of cattle fodder.

3.1.6.5. Suggested action points

- 1) Need to increase production of green and dry fodder by enhancing productivity per unit area, bringing uncultivated lands under fodder crops. The command area of irrigation projects like Salaulim can also be used for cultivation of green fodder crops.
- 2) 24x7 veterinary care services (Veterinarians + Medicines) need to be ensured.
- 3) Scheme to maintain non milk yielding cows on the lines of the stray cattle management scheme needs to be strengthened to contain the stray cattle menace which is a cause of many road accidents.
- 4) Sudharit Kamdhenu Scheme beneficiaries have to be made aware about the three and half years lock in period.
- 5) Simplified paperwork for the schemes and compulsory insurance of animals needs to be ensured.
- 6) Capacity building in clean milk production and good husbandry practices needed.
- 7) The 'Dudhgram' programme in the identified 16 villages in South Goa needs to be implemented in the right earnest.

3.1.6.6. Potential for increasing farmers' income

Dairying in Goa is mostly undertaken as a supplementary activity in addition to farming. At present dairying is a very profitable business in Goa owing to the high subsidy rates which cover 40-90% of the animal cost and availability of milk incentive. Farmers have to take proper care of the animals, follow good husbandry practices and dairying has to be done in a scientific manner. Fodder cultivation is undertaken by the farmer is an added bonus. Supplementary activities like Bio-Gas and vermicomposting further increases the farmer's income. On farm livestock waste can be effectively utilized to produce renewable energy and organic farming inputs – Biogas, Organic Manure units and Vermicompost units. The cow dung also provides a ready slurry for production of organic manures.

3.1.7 Animal Husbandry - Poultry

3.1.7.1. Introduction

Being a tourist State, demand for poultry products is very high in Goa. The demand is 150,000 broilers per week, and local supply is just one third of the demand. The per capita poultry consumption in Goa is 3 Kg of meat and 80 eggs per annum, which is quite high. Poultry farming therefore has scope for growth in Goa. Poultry products are an excellent source of high quality protein for the common man.

Backyard poultry with 2-5 birds is also an option which is being promoted in the State by ICAR – CCARI. The backyard poultry birds are preferred as eggs and meat from birds reared under free range conditions have low cholesterol concentration. The meat is tastier due to their free movement and fat is not accumulated superficially under the skin like broilers. As per Livestock Census, 2012, there are 2,92,000 poultry birds (including backyard poultry, poultry farm birds, ducks, turkey, etc.), of which 1,04,969 poultry birds are in South Goa district. Details are given below:

Sr. No.	Particulars	Nos.
1	Layer birds	23542
2	Broiler birds	9510
3	Backyard poultry birds	71416
4	Others (ducks, turkey etc.)	501
	Total	104969

5	Households involved in backyard poultry	8463
6	Private poultry farms	2
7	Households involved in poultry rearing	10

3.1.7.2. Credit flow in the last three years

Credit flow data, exclusively on AH - Poultry, is not available for want of appropriate codes in LBR.

3.1.7.3. Assessment of Credit potential for 2018-19

The credit potential for poultry during the year 2018-19 is assessed as under:

(₹ Lakh)

Sr. No.	Activity	Unit	UC	2018-19		
				Phy. Units	Fin. outlay	Bank loan
1	Layer units - 2000 birds	No.	8.80	14	123.00	92.00
2	Broiler units - 1000 birds	No.	2.46	34	84.00	63.00
3	Rural back yard poultry 100 birds	No.	0.26	210	55.00	41.00
4	Open cage transport vehicle	No.	8.00	7	62.00	46.00
5	Egg / broiler cart	No.	0.10	14	2.00	1.00
4	Misc. –hatchery / feed Mill	No.	26.40	3	79.00	59.00
	Total			282	404.00	303.00

Block-wise credit potentials are given in **Annexure I**.

3.1.7.4. Availability of infrastructure, critical gaps & interventions required

The Department of Animal Husbandry & Veterinary Sciences, Government of Goa is operating 03 schemes in the Poultry Sector – Setting up of Poultry 500 Broilers / 1000 layers, Transport of Poultry feed and Modern Poultry farm. Quality poultry feed is unavailable in the State and the feed transport subsidy @ ₹ 200 per MT is available to the registered poultry farmers for transportation of ready poultry feed from outside the State.

Backyard Poultry units are also supported under the SC / ST special component plans under Pashupalan Scheme of the Department. There are 02 Poultry Coop. Societies in the State. Poultry activities in the State have declined mainly because of feed shortage / labour issues plus the climatic conditions - humid weather and high rainfall are not conducive to the growth of birds and they are susceptible to diseases. Purchasing feed from outside the State increases production costs and reduces the poultry farmers' market competitiveness.

3.1.7.5. Suggested action points

- 1) Promotion of Back Yard Poultry Birds through women / SHGs.
- 2) Capacity building of beneficiaries for rearing of commercial poultry birds.
- 3) Encourage setting up of local feed mixing units can ensure availability of feed.
- 4) Ensuring availability of Day Old Chicks (DOCs) - setting up of a hatchery in the District.
- 5) Poultry business is risky – Credit Guarantee Fund / Insurance could be considered.
- 6) Automated poultry dressing units can be set up / production and marketing of value added products.

3.1.7.6. Potential for increasing farmers' income

Poultry farming is a supplementary source of income / livelihood option for rural households and farmers, especially women, their SHGs. Promotion of Backyard Poultry Farming (BPF) is one of the key

components of the Prime Minister's scheme to augment the farmer's income. Local birds and their eggs fetch double the price than the commercial variety of poultry.

A shift from commercial poultry to BPF is likely, as animal welfare activists have challenged the caged farming concept on ethical grounds and sheer cruelty to animals. The Supreme Court is presently hearing a petition urging it to impose a ban on keeping poultry animals in suffocating cages. The local chicken feed on insects and agro waste and a dozen of them can produce more than a kilogram of manure per day, which integrates with agricultural operations. Poultry manure has high fertilizer value and can be used for increasing yield of crops.

3.1.8 Animal Husbandry - Sheep, Goat and Piggery

3.1.8.1. Introduction

The demand for Mutton / Pork is high in Goa due to local food preference as well as due to the high floating population of domestic and international tourists. Pig rearing, is a household backyard activity in many parts of the District. As per the Livestock census 2012, there are 7087 goats, 24 sheep and 34837 pigs in the district. Goat rearing is a scattered non-commercial activity. There are no local breeds of goat. Rearing of sheep in the district is negligible.

3.1.8.2. Credit flow in the last three years

Credit flow data, exclusively on this sector, is not available for want of appropriate codes in LBR.

3.1.8.3. Assessment of Credit potential for 2018-19

The credit potential assessed for 2018-19 is below:

Sr. No.	Activity	Unit	UC	(₹ Lakh)		
				2018-19		
				Phy. Units	Fin. outlay	Bank loan
1	Pig rearing (4+1 unit) with shed	No.	3.47	68	236.00	177.00
2	Goat Rearing (18+2 unit +shed)	No.	1.74	55	96.00	72.00
3	Misc. (Shed repair, extn, etc.)	No.		0	36.00	27.00
	Total			123	368.00	276.00

3.1.8.4. Availability of infrastructure, critical gaps & interventions required

The State Govt. is providing assistance for Piggery Development – Rearing and Fattening of the pigs. The maximum subsidy admissible is 25%. Piglets of large White Yorkshire breed are available at Govt. farm at Ponda. Meat processing in the district is limited to processing of pork into sausages, which have a demand among locals.

3.1.8.5. Suggested action points

- 1) The registered slaughter houses in the State should be modernized on a priority basis for hygienic meat production and better utilization of byproducts.
- 2) Capacity building of progressive farmers should be done.
- 3) Limiting role of traders / middlemen to ensure remunerative prices to small farmers.
- 4) Promotion of Sheep / Goat rearing in large plantation/horticulture orchards.
- 5) Stall fed units for Goats / Sheep are being popularized by ICAR and can be promoted in Goa.

3.1.8.6. Potential for increasing farmers' income

Besides providing valuable animal protein in the diet, sheep / goat / pig rearing provides supplementary income to the farmers. They can be tried as a component of integrated farming system. This activity is appropriate in the mountainous areas of Goa where crop and / or dairy farming are not feasible. They also provide easy liquidity to the farmers.

3.1.9 Fisheries

3.1.9.1. Introduction

The staple food of Goa is fish curry rice. Fish is relished as a delicacy by the local populace and the tourists who flock to the State. The 104 Km long coastline, 250 Km inland waterways, continental shelf area of about 10,000 km² with about 100 fathoms depths, 330 ha of brackish water resources provides good scope for fisheries development, particularly through capture and coastal aquaculture. The coast is full of creeks and estuaries which provides excellent nurseries for major fishes (fish seeds) as well as good shelter for fishing crafts.

The major fishes found in Goan waters are prawns and shrimps, clams, mullets, catfish, pearlspot, crabs, glassy perchlets, ladyfish, silver biddies, scat, milkfish and anchovies. The Stripped Grey Mullet (Shevto) - *Mugil cephalus* is declared as the State Fish of Goa. During the year 2016, the marine fish production of 1,01,053 tonnes and inland fish production of 4,403 tonnes was achieved. Generally, 15% of the fish catch is exported.

04 blocks in South Goa - Mormugao, Salcete, Quepem and Canacona are along the coastline. South Goa has 22 fish landing centres - 03 major, 09 medium and 10 minor. There are 04 inland fish landing points in Canacona. The total fishermen population of Goa is 10545 of which 64% are located in South Goa. The total fishermen families in Goa are 2189 with 1388 families in 23 villages of South Goa. 1481 fisher folk are engaged in fish marketing, 953 were from South Goa, about 96% are women. (Marine Fisheries Census of CMFRI, 2010). In South Goa, there are 14 fisheries coop societies of boat owners.

3.1.9.2. Credit flow in the last three years

2016-17 credit flow data, exclusively on Fisheries, is not available for want of appropriate codes in LBR.

3.1.9.3. Assessment of Credit potential for 2018-19

The credit potential for fisheries during 2018-19 is estimated as under:

Sr. No.	Activity	Unit size	UC	(₹ lakh)		
				2018-19		
				Phy. Units	Fin. outlay	Bank loan
1	Wooden trawler replacement *	No.	57.75	30	1733.00	1299.00
2	Mechanization of canoes OBM	No.	1.65	72	119.00	89.00
3	Fiber Boats (motorized) replacement	No.	2.31	60	139.00	104.00
4	Repair & WC of vessels **				201.00	151.00
5	GPS, fish finder, search beacon	No.	1.54	320	493.00	370.00
6	Misc. Equip.	No.			200.00	150.00
7	Freshwater Culture		5.83	10	58.00	44.00
8	Ornamental fish	Ha	3.30	7	23.00	17.00
9	Mussel culture	No.	0.44	3	1.00	1.00
10	Mud crab culture	No.	8.25	3	25.00	19.00
11	Brackish prawn culture	No.	12.32	2	25.00	18.00
	Total			507	3016.00	2262.00

* Along with engine + power block

** 0.50 lakh for trawlers, 0.20 lakh for mech. boats & 0.05 lakh for non-mech. Boats.

Block-wise credit potentials are given in **Annexure I**

3.1.9.4. Availability of infrastructure, critical gaps & interventions required

In Goa, as Maximum Sustainable Yield level (MSY) has been reached in the marine waters and fresh licenses are not issued for introduction of new trawlers. Replacement of existing mechanized boats (trawlers) is being permitted by the Govt. There are 585 trawlers (441 operational), 751 motorized fishing canoes, 529 non-motorized fishing canoes and 4116 registered fishing gears in South Goa as at the end of 31 March 2016. Of the 15 aquaculture farms registered with Coastal Aquaculture Authority (CAA), 9 are active in the district; three farms are permitted by CAA for shrimp rearing in the district.

The Fisheries Dept. is operating 23 subsidy schemes which provide benefits for fishing activities like purchase of OBM, Canoes, Gill Nets, kerosene, construction of fish market, Supply of Insulated Boxes, Purchase of power Blocks, Construction and Renovation of Farm ponds, Reimbursement of VAT on H.S.D. oil, Purchase of Safety Jackets and Life Buoys for the Fishing Vessels, etc. Infrastructure works like Repair of Existing Net Mending Shed, Construction of Fishing Ramp, Reconstruction / Repair / Maintenance of existing fishing jetties, etc. are taken up for the benefit of the fishing community.

Under RKVY, 02 innovative projects are going on in South Goa. 15 cages had been installed in open sea at Pollem (Canacona) during 2016-17. The project is handed over to the Open Sea Cage Culture Group, Pollem. The cages are stocked with seabass seed. The Reservoir Cage Culture Project is also initiated to create employment amongst the local youth during 2016-17. 48 Cages have been installed in Chapoli Reservoir, Canacona and are stocked with *Pangasius sutchi* fish seed.

The funding for the jetty infrastructure upgradation project at Cutbona and Vasco in South Goa District is likely to be covered under RIDF. There are six 100% EOU marine processing units in South Goa, of which two are canning and fish paste making units. There are 12 ice plants in the district, a fish drying yard at Colva. A fish meal plant is operational at Sanguem and another one is proposed at Barcem.

NABARD has demonstrated 02 project one each on Crab Culture and Mussel Culture under its Farm Sector Promotion Fund (FSPF). The projects need to be replicated as there is ample potential for the same in South Goa. South Goa has about 2000 ha of khazan land and about 100 ha of mangrove suitable for brackish water fisheries which are suitable for Crabs, Mussels, Clams and Oysters.

The marine fish stock has started showing the sign of over-exploitation and the catch is fluctuating with a marked downward trend. The inland fish catch is however showing an increasing trend.

3.1.9.5. Suggested action points

- 1) Cold storage infrastructure needs to be in place near jetties.
- 2) Construction of modern wholesale fish market.
- 3) Strengthening of jetty infrastructure.
- 4) Popularization of power blocks on trawlers to reduce dependency on labour.
- 5) Shift the export trend from frozen fish to value added sea food items.
- 6) Land classification issues especially for shrimp farming have to be addressed.
- 7) Capacity building of fish/prawn farmers through demo plots and exposure visits.
- 8) The State Govt. may establish quality feed mill and fish seed hatcheries.

3.1.9.6. Potential for increasing farmers' income

Capture fisheries in Goa is one of the major sources of valuable food, employment and a net contributor in the foreign exchange earnings. Value addition of fish, processing of low value fish, improving quality of preservation methods has to potential to double the income of the fish farmers.

3.1.10 Farm Credit - Others

3.1.10.1. Introduction

Other allied agricultural activities comprise of bullocks, bullock-carts, miscellaneous agricultural implements and vehicles for farm use and transportation of farm produce. Fully secured gold loans extended for agricultural purposes, loans given to farmers for pre-payment of non-institutional loans and loans extended to farmers for procuring 2-wheelers to commute between home, farm and market also fall in this category. According to Livestock Census 2012, there are 7610 animals used for draught purpose in South Goa. The work animals / carts are employed both in agricultural operations as well as in transportation of agriculture / other goods over short distances. Despite increase in mechanization, SF / MF continue to depend on animal power for farm operations. Demand for specialized vehicles for transportation of farm produce to local markets is also increasing.

3.1.10.2. Credit flow in the last three years

The credit flow data is not available for this sector.

3.1.10.3. Assessment of Credit potential for 2018-19

The potential for 2018-19 is assessed as under:

(₹ Lakh)

Sr. No.	Activity	Unit size	UC	2018-19		
				Phy Units	Fin. outlay	Bank loan
1	Draught Animals	No.	0.75	24	19.00	15.00
2	Bullock Carts	No.	0.24	06	1.00	1.00
3	Farm Vehicles	No.	6.68	110	735.00	551.00
4	Other Agri Loans			0	9067.00	6800.00
	Total			140	9821.00	7367.00

Block-wise credit potentials are given in **Annexure I**

3.1.10.4. Availability of infrastructure, critical gaps & interventions required

Draught animals are used only in areas where farm machinery cannot be operated. Quality breeds are also not available in the State. Therefore, scope for potential increase in this activity is not anticipated.

3.1.10.5. Suggested action points

Govt. needs to consider tenancy cards to tenant farmers, if land title is not clear, banks normally sanction fully secured gold loans. A shift has to be made from the Agri Gold Loans to KCC loans. Also, despite easing of procedures in farm loans, availability of hassle free finance is one of the major issue for farmers. Thus, gold loans for production purpose remains a sought after mode of credit facility for farmers. The actual number of 2-wheelers purchased by farmers also needs to be ascertained.

3.1.10.6. Potential for increasing farmers' income

The work animals / carts offer avenue for the SF / MF to remain gainfully employed in the lean period and raise their income. Debt servicing if taken from non-institutional sources is a costly affair and is a burden for all the SF / MF. Similarly, the farmer often resorts to distress sale as he does not have the means / time to transport the produce to the nearest Mandi. Transportation cost is also an overhead cost in agriculture, which the farmer has not reckoned. Factoring in and planning for the above considerations will help the farmer to increase his income.

3.2 Agriculture Infrastructure

The implementation of the following activities with finance from banks has been covered under Agriculture Infrastructure:

- (a) Loans for construction of storage & marketing infrastructure.
- (b) Land Development, Soil Conservation and Watershed Development.
- (c) Agri. Infra. – Others - Vermicomposting, Tissue culture, Agri-biotechnology, Seed production, Bio Pesticides / Bio-pesticides, bio-fertilizer, (₹ 100 Crore / Borrower).

3.2.1 Construction of Storage facilities

3.2.1.1. Introduction

Agricultural produce requires scientific storage and handling to minimize post-harvest loss and to maintain its nutritional quality. Farmers also need efficient marketing arrangement for realizing fair and remunerative prices. It is necessary to develop the right type of product-specific marketing and storage facilities at various locations which are accessible to farmers and primary processors.

The major agricultural commodities produced in Goa which require scientific storage are Paddy, Pulses, Coconut, Cashewnut and Arecanut. Cold storages are required for Fruits & Vegetables like Cucurbits, Amaranthus, Mango, Banana and Pineapple. In Goa as the production is less, storage facilities are needed even for stocking of imported agri produce.

As on 31 March 2016, there are six FCI warehouses with a total capacity of 9100 MT, one in each block except Dharbandora. There are 05 Cold storages with 682 MT capacity in South Goa. One of them is a Govt. owned storage at Canacona with a capacity of 38 MT and others are private units storing marine products.

3.2.1.2. Credit flow in the last three years

Credit flow data, exclusively on this sector is not available for want of appropriate codes in LBR.

3.2.1.3. Assessment of Credit potential for 2018-19

The credit potential assessed for Agri Marketing Infrastructure is as under:

Sr. No.	Activity	Unit size	UC	(₹ Lakh)		
				2018-19		
				Phy. Units	Fin. outlay	Bank loan
1	Cold storages (1000 MT)	No.	63	3	189.00	142.00
2	Market yards	No.	231	1	231.00	173.00
3	Godowns (100 MT)	No.	3.68	7	26.00	19.00
4	Small milk chilling units (1000 litres)	No.	5.51	7	39.00	29.00
	Total			18	484.00	363.00

Block-wise credit potentials are given in **Annexure I**.

3.2.1.4. Availability of infrastructure, critical gaps & interventions required

The Goa State Agriculture Marketing Board (GSAMB) has total storage capacity is 9420 MT. under its fold, the GSAMB has 08 market yards, of which 04 are in South Goa – Main Market Yard at Margao and Sub Market Yards at Ponda, Curchorem and Canacona. There is a proposal to acquire land and develop a sub market yard in the Dharbandora Block. There are 02 border checkpoints in South Goa District at Mollem (Dharbandora) and Pollem (Canacona) to collect market fee on import of notified commodities. Presently 27 agricultural commodities are notified for regulating in the market area. The market fee levied is 1% of purchase value of the notified agricultural produce. The APMC also runs two schemes – Pledge Finance Scheme and the Agricultural Produce Arrival Incentive Scheme (in Coconut, Areca and Raw Cashewnut).

The Agri Bazaar Project is coming up in Curti, Ponda. The project TFO is ₹ 36.50 crore of which 75% contribution is through RKVY grant and the balance is being contributed through GSAMB internal funds. Expansion of the Canacona sub market yard is also being done. Presently no market yards are linked to eNAM. All the 08 market yards in the State are proposed to be linked over the period of next 2-3 years. GoI has earmarked ₹ 75 lakh to Goa towards grounding of the eNAM Project. GSAMB has identified Ponda Market Sub Yard for implementation of the eNAM project through its Agribazar complex once it is complete. The first phase of the project is in the completion stage. Digital payments through various modes – mobile apps, POS machines will be made to the producers and traders.

The State Government provides 50% subsidy assistance for construction of godown cum office buildings to dairy societies, PACS, etc. Govt. has also proposed to promote construction of 15 village level godowns and setting up small milk chilling units in each of the village identified for ‘Dudhgram’ scheme.

The Rural Haat Scheme of NABARD could be utilized for developing basic infrastructure in rural markets. To avail of the scheme, the land on which the marketing infrastructure comes up, should belong either to a Gram Panchayat, PACs or a Producer Organization or made available to it by the Block / District Administration or the Villagers. A one-time grant assistance of ₹ 10 lakh or 90% of the cost of project is available under the Scheme.

Coconut (Copra), Arecanut and Cashew are the major agricultural products that are brought to the market yards / stored for marketing purpose. Marine products are exported through Mormugao Port Trust (MPT) and all the marine processing units are located in Mormugao block. Besides, products like button mushrooms and chilies are also being exported through MPT and Dabolim Airport in the same taluka. There are also plans to set up a logistics hub in Canacona and Dharbandora, where warehousing, truck terminal, cold storage facilities, hazardous cargo facilities, workshops, container repairs etc. would be established.

In Goa, there is no private sector investment in the storage sector except in cashew, which is linked to processing industry. The Goa State Horticulture Devt. Corporation is in the process of establishing an integrated market complex replete with storage structures at Thivim in North Goa District.

3.2.1.5. Suggested action points

There is a need for upgradation of the infrastructure facilities in all the market yards as per warehousing norms. The market yards set up are quite old (established in the 70s and 80s) and have not been upgraded since. There is also a need to set up cold storage facilities at the taluka level for storing Fruits and Vegetables. Awareness needs to be created about pledge loans and Warehouse Receipts (WRs) among farmers.

3.2.1.6. Potential for increasing Farmers income

Enabling infrastructure like warehouses and cold storages help the farmer in timing the sale of his produce as per favorable rates and thus, he is assured of enhanced income. Distress / Farm Gate sale can be avoided. Pledge Financing / WRs helps him to avail of institutional credit instead of borrowing from moneylender's / commission agents.

3.2.2 Land Development, Soil Conservation and Watershed Development

3.2.2.1 Introduction

Land development comprises all the activities undertaken by farmers to improve productivity of land to prevent erosion and to improve land quality. Through these activities, the soil productivity can be improved by tackling the factors of land degradation. Integrated Watershed Devt., management of fragile eco-systems, conversion of non-forest wastelands and organic farming can be taken up with Integrated Nutrient and Pest management.

The soils in Goa are lateritic and highly acidic in nature and generally require gypsum treatment. Land levelling and soil conservation measures are needed on the eastern (mountainous) side and regular bunding, repairs and maintenance along the coast. There are around 10000 Ha of Khazan lands, protected by nearly 250 embankments of around 225 Km. that need maintenance. 19 watershed projects have been implemented in the district upto to 11th Five-year plan covering a total area of 20033 ha.

3.2.2.2. Credit flow in the last three years

Credit flow data exclusively on this sector is not available for want of appropriate codes in LBR.

3.2.2.3. Assessment of Credit potential for 2018-19

The potential assessed for land development is as under.

(₹ Lakh)

Sr. No.	Activity	Unit size	UC	2018-19		
				Phy. Units	Fin. outlay	Bank loan
1	Land levelling and OFD	Ha	0.83	1900	1577.00	1183.00
2	Reclamation	Ha	0.28	580	162.00	122.00
3	Water storage ponds	No.	0.68	140	95.00	71.00
	Total			2620	1835.00	1376.00

Block-wise credit potentials are given in **Annexure I**

3.2.2.4. Availability of infrastructure, critical gaps & interventions required

During 2016-17, under "Soil Health Management" scheme, one Soil Testing Laboratory has been set up at Govt. Farm, Margao- Goa to cater to the Soil testing and analysis need of the farmers from South Goa District. During the current year the State Government has introduced Scheme called "Development of Manures and Fertilizers" under Soil Health Cards will be issued to the Farmers having Krishi Cards. This will ensure more economic use of fertilizers and better soil management.

The farmers who are provided with Soil Health Cards will also get subsidy assistance for purchase of Soil Conditioners like Rock Phosphate, Agricultural Lime and Dolomite besides Micronutrients like Zinc and Boron. Water Storage structures called **Jalkunds** - artificially created structure on hill slopes or on plain areas and designed to store rain water with a storage capacity of 12 cu. m of water to meet the critical demand of the crop in their growth are also promoted by the Department of Agriculture. 100% subsidy is provided by the State Government for maximum of 3 nos. of *Jalkund* per farmer. During the year 2016-17, 08 Jalkunds have been constructed incurring an expenditure of ₹ 0.74 lakh.

The Agriculture Dept. has a separate Engineering wing to assess and implement public Land Development activities. The State Govt. extends 50 -75% grant assistance for repairs and maintenance of notified bunds, desilting, renovation of water bodies, undertaking various land development works like land levelling, trenches, sunken bunds, construction of retaining wall, water storage and harvesting structures, etc.

The '*Paramparigat Krishi Vikas Yojana*' of GoI which promotes organic farming through farmer clusters with assistance of ₹ 20,000 per acre per farmer in three years is yet to take off. For 2017-18, NABARD subsidy assistance is available for setting up of static / mobile soil testing labs under the National Programme on Organic Farming (NPOF) Scheme. Subsidy assistance is also available under the Agri Clinic and Agri Business Centres (ACABC) scheme for setting up of agri clinics in the State.

To revitalize Khazan lands, the State Govt. has a scheme, wherein cost of saline resistant paddy (Korgut) seed is subsidized 100% and a one-time assistance of 50% subsidy on expenditure incurred on machinery hire is provided for bringing fallow lands under agriculture.

3.2.2.5. Suggested action points

- (i) The issuance of Soil Health Cards need to be done for all landholdings in the district.
- (ii) A comprehensive plan for rain water harvesting and conservation needs to be made.
- (iii) Paddy fields in the coastal areas need to be protected from salinity ingress through appropriate protection structures.
- (iv) Bund strengthening, desilting of ponds needs to be done.
- (v) Setting up of mobile Soil Testing Labs which do the sampling in the farmer field.

3.2.2.6. Potential for increasing farmers' income

Soil health has a direct correlation with productivity. Once soil health is ensured, increased productivity will naturally follow on scientific cultivation of the crop. Issue of soil health cards will also reduce indiscriminate use of fertilizers and thus reduce the cost of cultivation. Bringing the wastelands under cultivation with appropriate land development and Soil Conservation measures will further increase the area under cultivation and boost the income of the farmers. Precision farming also can be resorted to so as to maximize income levels.

3.2.3 Agriculture Infrastructure - Others

3.2.3.1. Introduction

Organic farming, which is a holistic production management system, is gaining importance as organic produce is healthy, free from chemical residues. The present day intensive agriculture practices have resulted in soil fatigue and gradual deterioration of soil health. Therefore, emphasis is being given to Soil Rejuvenation by reducing use of chemical inputs and increasing the use of biological and organic inputs.

There are two large scale vermicompost production units at Canacona and at Dabal. Usage of organic inputs is low due to unavailability, bulky nature of produce and high cost of transport and labour for application. There are no bio-fertilizer or bio-pesticide production units in the District. The use of tissue culture planting material is also not popular among farmers.

3.2.3.2. Credit flow in the last three years

Credit flow data exclusively for this sector is not available for want of appropriate codes in LBR.

3.2.3.3. Assessment of Credit potential for 2018-19

The credit potential for this sector is assessed as under:

(₹ Lakh)

Sr. No.	Activity	Unit size	Unit cost	2018-19		
				Phy. Units	Fin. outlay	Bank loan
1	Vermicompost (150T/year)	No.	3.30	12	40.00	30.00
2	Compost NADEP (40 TPA)	No.	1.12	07	8.00	6.00
3	Bio fertilizers	No.	44.00	01	44.00	33.00
4	Misc. (fencing, etc.)			0	200.00	150.00
	Total			20	292.00	219.00

Block-wise credit potentials are given in **Annexure I**.

3.2.3.4. Availability of infrastructure, critical gaps & interventions required

State Govt. provides 75% to 90% subsidy on fencing, organic manure production and purchase of bio-pesticides, pheromone traps and lures. The State Government is looking to implement an Organic Farming scheme under Cluster development in Sanguem, Quepem and Canacona talukas on a Pilot basis. It is also trying to develop the Government Farm at Kalay as a Model Organic Farm.

Subsidy assistance is also available under NABARDs NPOF Scheme. NABARD has sanctioned a project to ICAR under its FSPF to study the efficacy of the pheromone traps in trapping fruit flies in Cucurbits and Mango and Rhinoceros Beetle and Red Palm Weevil in Coconut. The project is currently ongoing. Adarsh Coop Society and Goa Bagayatdar are facilitating organic certification of cashew.

3.2.3.5. Suggested action points

The infrastructure of the Government farms where the production of organic manures is planned has to be developed. Appropriate organic certification setup has to be established in the State. There is a need to produce FYM / Vermicompost at the block levels to cut transport costs. Small scale units have to be promoted at village level as is being done for the 02 FPOs formed under the PRODUCE Fund in Dharbandora and Rivona.

3.2.3.6. Potential for increasing farmers' income

Organic produce has a dedicated market and fetches premium price. Use of organic inputs cuts the cost of production and enhances soil quality, and benefits are realised on the long term.

3.3 Ancillary Activities

Loans to Food and Agro Processing units, Primary Agricultural Credit Societies (PACS), Micro Finance Institutions (MFIs) for on lending in agriculture sector, Agri Clinic and Agri Business Centres (ACABC) are included in ancillary activities of agriculture. These are supporting activities undertaken to create conditions necessary for carrying out agriculture or to provide services that result in forward and backward linkages.

3.3.1 Food and Agro Processing

3.3.1.1. Introduction

Loans for food and agro-processing up to an aggregate sanctioned limit of ₹ 100 crore per borrower from banking system is classified under this activity. Both term credit and working capital to the new units and working capital to the existing units are included.

The Food and Agro Processing industry is recognized as a **Sunrise Industry** in India, one that is backed by a strong domestic demand (Large population, changing lifestyles and food habits, disposable income), rising export opportunities (more integration with the global economy), supply side advantages (largest producer of many agricultural commodities) and good Policy Support (AEZs, National Mission on Food Processing). Though India's agricultural production base is reasonably strong, wastage of agricultural produce is sizeable. Presently the trend is from sustenance to market oriented farming. Development of this sector will encourage formation of product specific FPO / Farmer Produce Companies that will produce value added products, as per domestic / global demand.

Goa being a small State with small holdings, levels of production per farmer is not much and aggregation of the produce is required. The production of major agricultural produce in the State during 2016-17 is as under:

No.	Agro Produce	Production (Tons)	Processing status / marketable surplus
1	Paddy	169842	50% marketable surplus
2	Pulses	5912	No processing, full consumption
3	Cashew Apple / Nut	24396	100% processing – Nuts / Feni
4	Coconut	132.16 m nuts	Sold to Goa Bagayatdar, 15% processed
5	Arecanut	3102	100% sold to Goa Bagayatdar
6	Mango, Banana, Pineapple	42791	75% local consumption, 25% processed
7	Other Fruits	41740	Local consumption
8	Spices	292	100% sold to Goa Bagayatdar
9	Vegetables	84823	Local consumption
10	Fish / marine products	105456	25% processed
11	Sugarcane	40222	100% procurement / proc. by Sugar Mill

Notable marketable surplus is available only for Cashew, Coconut and Arecanut. Goan Cashewnut is in demand in the rest of the country and abroad. The cashew apple is processed into an alcoholic drink - Feni which has got a Geographical Indication (GI) registration and is unique to Goa. Coconut is widely consumed in the State itself and is the base ingredient for fish curry as also a wide variety of other dishes. Some of the coconut is dried as copra and is used for extraction of coconut oil. Extraction of virgin coconut oil also needs to be looked into. There are no major value addition activities in Arecanut.

Goa Bagayatdar and Adarsh Coop Society procure the plantation produce. Paddy is sold by farmers to approved dealers while select local vegetables are procured by Goa Horticultural Development

Corporation. Other fruits and vegetables are sold in local markets by farmers themselves. Fruits like Mango and Jackfruit are processed to a minor extent. There is a good potential for processing of minor fruits like Jackfruit and Kokum which are available in plenty in the State (lot of wastage is there) and consumed by the local populace in raw form, but are in demand in the Northern parts of India, where they are a delicacy, but not available. Milk is procured by Goa Dairy / SUMUL and processed into pasteurized milk and other milk products like ice-cream, dahi, shrikhand and paneer. There are no public sector units in agro and food processing sector in the district.

3.3.1.2. Credit flow in the last three years

Credit flow data exclusively for this sector is not available for want of appropriate codes in LBR.

3.3.1.3. Assessment of Credit potential for 2018-19

The credit potential for this sector during 2018-19 is assessed as under.

(₹ Lakh)

Sr. No.	Activity	Unit size	Unit Cost	2018-19		
				Phy. Units	Fin. outlay	Bank loan
1	Rice Mills 4800 TPA	No.	79.80	2	160.00	120.00
2	Poha / Murmura mills	No.	6.53	2	13.00	10.00
3	Flour mills – 280 TPA	No.	3.15	14	44.00	30.00
4	Bakery units 80 TPA	No.	7.98	10	80.00	60.00
5	Coconut Oil mills	No.	20.48	6	123.00	92.00
6	Mango / fruits 300 MT	No.	78.75	4	315.00	236.00
7	Kokum 72 TPA	No.	4.20	3	13.00	9.00
8	Cashew 50 TPA	No.	7.46	8	60.00	45.00
9	Cashew 500 TPA	No.	168.00	2	336.00	252.00
10	Fish / Milk / Meat Processing	No.	84.00	6	504.00	378.00
	Total			57	1430.00	1232.00

Block-wise credit potentials are given in **Annexure I**.

3.3.1.4. Availability of infrastructure, critical gaps & interventions required

Food processing links the primary sector (agriculture) with secondary sector (manufacturing). Therefore, in addition to general infrastructure like power, water, transport, other infrastructure like warehouses, cold storages, APMC markets, Quality Control labs, Machinery and equipment's are required to be in place for growth and development of the food industry. The growth of this sector also requires support services of licensing agencies, training and skill development institutes, marketing and **branding** services, etc.

NABARD has set up a ₹ 2000 crore Food Processing Fund to assist State Governments in development of the food processing industry. The National Mission on Food Processing (NMFP) was being implemented in the State through DITC. The GoI has delinked this scheme from central assistance from this year. However realizing the potential of this sector, the State Government has notified the **State Mission on Food Processing Scheme** in July 2017 under which financial assistance to the extent of 25% of the cost of Plant & Machinery and technical civil works, subject to a maximum of ₹ 30 lakh is extended for establishment of new food processing units as well as technology upgradation and expansion of existing food processing units.

The food processing sectors like fruits & vegetables, dairy / meat / poultry / fish products, bakery products, cereal / other consumer food products, rice / flour / pulse / oil milling and such other agri-horti sectors including food flavours, colours, oleoresins, spices, coconut, mushroom wines and hops

are covered under the scheme. The activities of aerated water, packaged drinking water and aerated drinks are excluded.

During 2016-17, the State Government has done the Modernization of Meat Processing Plant of the Goa Meat Complex Ltd at Usgaon at a total cost of ₹ 13.00 crore for supply of hygienic meat to the consumers. The transport infrastructure is excellent in the State. Mormugao Port Trust and the International Airport, both in Mormugao Taluka of South Goa District, facilitate export.

3.3.1.5. Suggested action points

- 1) Setting up of a **designated Food Park**.
- 2) Unused sheds in Industrial Estates should be reallocated for the development of food processing sector.
- 3) Aggregation of the produce followed by its processing needs to be done through farmer collectives / SHGs / FPOs.
- 4) Hub and spoke model could be adopted in view of small land holdings in the State.
- 5) Setting up of cold chain infrastructure to support this industry.
- 6) Capacity building and Hand Holding of the Agripreneurs is required.
- 7) Awareness about the FSSAI / Statutory procedures / Food Standards / GST need to be done for the streamlined development of the industry.
- 8) Contract farming for crops (raw material) required by the food processing industries needs to be done through legislative enactments.
- 9) Registration & certification of small food processing units needs to be done.

Goan Cashew and Cashew Feni are famous the world over so are its *Mancurad* variety of Mangoes. The plan of the State Government to market the State produce under the Brand Name “BIG” (Born in Goa) i.e. products unique to Goa, is a step in the right direction and if successful, will help in projecting Goa positively in the international Food Processing arena.

3.3.1.6. Potential for increasing Farmers Income

Value addition of agricultural produce increases value of farm produce several times over. Further if farmer is made part of the value chain through formation of FPO, his income will definitely be enhanced. The SF / MF can also go for small Primary Processing's like conversion of Black Pepper to White Pepper through which income enhancement will be assured. Crops like Coconut, Mango and Kokum are commercially more remunerative with minor processing interventions which would be successful through aggregation. Besides, agro industries like bakery, poha making with local rice have good demand. Development of processing capacity reduces post-harvest wastage and thus increases income. The producers will turn into entrepreneurs through formation of Farmer Producer Companies thereby commercializing agriculture. Devt. of Agro and Food Processing sector will help the Agripreneurs achieve MSME status and ensure sustainable livelihood / employment opportunities.

3.3.2 Agriculture Ancillary Activities – Others

3.3.2.1. Introduction

Loans to Cooperative Societies of farmers upto ₹ 5 crore for disposing of their produce, loans for setting up of Agri Clinic and Agri Business Centres (ACABC), loans to PACS / Farmer Service Societies, loans to Micro Finance Institutions (MFIs) for onlending to agriculture and loans to FPOs for production, post-harvest, processing and marketing activities are classified under this sector - Agri Ancillary activity – Others. This sector also includes loans given to Custom Service Units managed by individuals, institutions or organizations who maintain a fleet of tractors, bulldozers, well-boring equipment, threshers, combines, etc., and undertake farm work for farmers on contract basis.

PACS undertake a wide variety of operations such as lending, inputs sales, consumer goods sales, farm produce purchase for processing and deposits collection. PACS are eligible to avail of credit facility from any financial institution other than the apex institution to which these are affiliated. Agri-Clinics provide expert advice and services to farmers on various technologies. Agri-Business Centres are commercial units of agri ventures established by trained agriculture professionals like centre for maintenance and custom hiring of farm equipment, sale of inputs, etc.

During 2016-17, Paroda PACS has been supported by NABARD under its PACS as PO Scheme with a loan of ₹ 50 lakh for onlending to various farm and non-farm sector activities. In the past, Dharbandora PACS was also assisted with this assistance to develop into a Multi Service Centre. Grant Assistance under NABARD Cooperative Development Fund (CDF) has also been extended to these societies besides Kurdi PACS.

3.3.2.2. Credit flow in the last three years

The credit flow data exclusively for this sector is not available for want of appropriate codes in LBR.

3.3.2.3. Assessment of Credit potential for 2018-19

The credit potential assessed for this sector for 2018-19 is as under:

(₹ Lakh)

Sr. No.	Activity	Unit size	Unit Cost	2018-19		
				Phy. Units	Fin. outlay	Bank loan
1	Coop. Society Loans	No.		1	800.00	600.00
2	Loans to PACS	No.		8	280.00	210.00
3	ACABCs	No.	10.00	7	70.00	53.00
	Total			16	1150.00	863.00

Block-wise credit potentials are given in **Annexure – I**.

3.3.2.4. Availability of infrastructure, critical gaps & interventions required

There are 50 Primary Agriculture Cooperative Societies (PACS) in South Goa. Most of them do only PDS business. The PACS are associated with the Goa State Coop. Bank Ltd. The procurement and marketing services to farmers is provided by 06 branches of the two major Societies, viz., Goa Bagayatdar and Adarsh Coop. Society. NABARD also provides loan assistance to the PACS under its PACS as PO and PACS as MSC schemes. Grant support is also available from NABARD under CDF.

State Govt. provides assistance to PACS - Grant and Loan (1:1) for branch computerization, in addition to share capital contribution, grant for infrastructure support, managerial subsidy, grant in aid, etc. On completion of 50 years, PACS can avail financial incentive of ₹ 2 Lakh. The PACS in Goa come under the jurisdiction of Registrar of Coop. Societies (RCS). Many of the PACS are saddled with accumulated losses, carried forward for more than 10 years. There has been a proliferation of Urban Coop. Societies in the villages where the PACS are doing operations. ACABC scheme is yet to take off. Ecotourism ventures as Agri Business Centre could be popularised in the State under the Scheme. Private extension services through Agri Clinics and Agri business Centres (ACABCs) will help supplement / bridge the extension gap.

3.3.2.5. Suggested action points

To retain their relevance to keep themselves afloat PACS have to evolve as Multi Service Centres providing a wide array of services besides PDS like custom hiring of equipment's, Hardware stores, Consumer Stores, Milk Parlours, etc. based on their location and demand of the area. Managerial efficiency of the PACS also need to be strengthened to improve efficiency. PACS can also work in the

Banking Correspondent (BC) mode. PACS Development Cell in the Goa SCB has to be activated to study and develop business plan for PACS.

3.3.2.6. Potential for increasing Farmers Income

Ecotourism centres can be set up by potential farmers as a form of Agri Business to enhance their income. Wide variety of activities like treks, sales counter for farm produce, cookery classes, etc. can be organized on the agro-tourism unit for generating income.

Chapter 4: Credit Potential for Micro, Small and Medium Enterprises (MSME)

4.1. Introduction

MSMEs are small sized entities, defined in terms of their size of investment. The MSMEs are classified in terms of investment made in Plant & Machinery (P&M) if they are operating in the **Manufacturing Sector** and investment in Equipment for **Service Sector** companies. The sub-classification is as under:

Manufacturing sector	
	Investment in Plant and Machinery
Micro Enterprises	Does not exceed ₹ 25 lakh
Small Enterprises	More than ₹ 25 lakh, but does not exceed ₹ 5 crore
Medium Enterprises	More than ₹ 5 crore, but does not exceed ₹ 10 crore
Service Sector	
	Investment in Equipment
Micro Enterprises	Does not exceed ₹ 10 lakh
Small Enterprises	More than ₹ 10 lakh, but does not exceed ₹ 2 crore
Medium Enterprises	More than ₹ 2 crore, but does not exceed ₹ 5 crore

MSMEs help in capital formation and are the growth drivers of Indian Economy contributing to production, exports and employment to a large number of unskilled and semi-skilled people. They also support bigger industries by supplying them with raw material, basic goods, finished goods and components. MSME units continue to enjoy priority sector lending status upto 03 years after they grow out of the MSME category. Loans extended to units in the Khadi and Villages Industries (KVI) sector are also eligible for classification under the sub-target of 7.5 percent prescribed for Micro Enterprises under priority sector.

The Secondary and Tertiary sector comprising of industries and service activities contribute to 80% of the State GDP. The main avenues for employment in the district are tourism, mining and its incidental service sector activities. Major units are in Pharmaceuticals and Engineering Goods sector. The Verna Industrial Estate in South Goa is host to almost every pharmaceutical company in India. The other units are in the fabrication, machinery, ship building and electronics sectors. Cottage industries (Carpentry, Blacksmith, Bamboo works, Handicrafts) are present to a limited extent.

4.2. The credit flow to the MSME sector in South Goa during the last 03 years is as under:

(₹ Lakh)

GLC flow	2014-15	2015-16	2016-17
MSMEs	13171.36	26658.13	106168.00 *

* RBI included Medium Enterprises in Micro and Small Industries sector during 2016-17

4.3. Assessment of Credit potential for 2018-19

The credit potential assessed for MSME sector during 2018-19 is as under:

(₹ Lakh)

No.	Sector	Units	Financial Outlay	Bank Loan
1	Term Loans			
a	Manufacturing Sector			
i	Micro	1025	10250.00	7688.00
ii	Small	235	38775.00	26438.00
iii	Medium	165	99000.00	74250.00
b	Service Sector			

No.	Sector	Units	Financial Outlay	Bank Loan
i	Micro	620	3100.00	2325.00
ii	Small	160	8000.00	6000.00
2	Working Capital			
a	Manufacturing Sector			
i	Micro			3842.00
ii	Small			13219.00
iii	Medium			37125.00
b	Service Sector			
i	Micro			698.00
ii	Small			1800.00
	Total	2205		173385.00

Block-wise credit potentials are given in **Annexure I**.

4.4. Availability of infrastructure, critical gaps & interventions required

As per recommendations of the Kamath Committee, Ministry of MSME, a simplified one -page registration form which constitutes a self -declaration format under which an enterprise can be registered with Ministry of MSME has been devised called the **Udyog Aadhaar Memorandum (UAM)**. UAM is a simple form to be filled online by the industrial units. The UAM portal is also accessible on mobile devices. UAM has replaced the filing of Entrepreneurs Memorandum (EM part -I & II).

As per Directorate of Industries, Trade & Commerce (DITC), Government of Goa data, the block-wise number of registered MSME units (with UAM) in the District as on 31 March 2017 are as under:

Block / Taluka	Indl. Estates	MSME Units				Employment generated (No.)	Inv. Cost. (₹ lakh)
		Micro	Small	Medium	Total		
Salcete	2	239	142	12	393	6847	24259.00
Quepem	2	31	12	0	43	406	1604.00
Dharbandora	-	05	01	0	6	30	82.00
Sanguem	1	08	02	0	10	72	166.00
Mormugao	1	140	105	10	255	7130	19364.00
Canacona	1	15	04	0	19	142	468.00
Ponda	2	129	68	2	199	2734	9222.00
Total	9	567	334	24	925	17361	55165.00

Most of the units are located in the Salcete, Mormugao and Ponda blocks. Of the 925 units, 558 units are in the Manufacturing Sector and 367 units are in the Services Sector. During 2016-17, 105 units – 66 Micro, 37 Small and 02 Medium Industries have been added in the district, taking the total number of registered MSME units to 1030 as on 31 March 2017. Besides, there are 124 Large Industries.

There are three Corporations under DITC, viz., Goa Handicrafts, Rural and Small Scale Industries Development Corporation (GHRSSIDC) & Khadi and Village Industries Board (KVIB) and Goa Industrial Development Corporation (GIDC), to maintain and develop industrial estates, promote various activities under KVIC, implement PMEGP scheme and to provide training and marketing support for artisans, small scale cottage industries, etc.

The Economic Development Corporation (EDC), through its flagship scheme, Chief Minister Rozgar Yojana (CMRY) provides financial assistance in the form of equity and grant to entrepreneurs. During

2016-17, under CMRY, subsidy amounting to ₹ 52.46 lakh has been disbursed to 29 MSME units. Similarly during 2016-17, under CMRY 412 beneficiaries have been disbursed loan amounting to ₹ 8.40 crore approximately.

The Government of Goa has enacted Goa Investment Promotion Act, 2014 for facilitating single window clearance for investors to invest in Goa. Pursuant to this Act, Goa Investment Promotion and Facilitation Board, a statutory body constituted for speedy clearance of investment proposals of investment above ₹ 5 crore. The State Government has introduced, "The Goa State Financial Relief Scheme for Sick Industrial Units 2016" with the objective to provide financial support to existing Industrial Units who are under award or scheme approved by BIFR or any other industrial units declared by the State Government. Under the Modified Interest Rebate Scheme – 2012 (MIRS-2012) interest rebate is provided to units in backward talukas.

Under the Prime Minister's Employment Generation Programme during the year 2016-17, 60 proposal with project cost of ₹ 390.33 lakh and involving subsidy of ₹ 118.38 lakh have been sanctioned which will generate employment for 379 people.

Govt. has also planned three logistics hubs, of which two are to be located in Canacona and Dharbandora, where warehousing, truck terminal, cold storage facilities, perishable agri-produce facilities, hazardous cargo facilities, workshops, container repairs etc. would be established. To increase clarity and transparency in allocation of plots in the industrial areas, the Government has notified the Goa Industrial Development Corporation Allotment Regulations, 2012. Further, to take back plots allotted to units but are non-operational, the Goa IDC Transfer & Sub-lease Regulations, 2013 have been notified. At Agnel Ashram, Verna, a business incubator - Centre for Innovation and Business Acceleration (CIBA) is functioning to help the budding entrepreneurs in food processing, IT and waste management sectors under 'Start up India' programme. The draft Goa Start-Up Policy for the IT Sector has been notified in September 2017.

As on 31 March 2017, 7582 Shishu category loans, 4218 Kishore category loans and 795 Tarun category loans have been sanctioned to the tune of ₹ 14685.00 lakh, under the MUDRA scheme. Under the Stand Up India Scheme, 48 applications have been sanctioned and 37 disbursed as on 31 August 2017.

Critical issues hampering further growth of new industries in Goa are scarcity of land and public opposition to projects. This is compounded further as around 60% of the total plots allotted by the Goa Industrial Devt. Corporation (GIDC) have remained unutilized. A substantial land bank has been locked in a court cases on Special Economic Zone (SEZ). Lack of Skilled labour is another constraint for new units as importing labour from outside increases the operational costs and the units also lose out on the grants from DITC. The MSME Development Institute is located in the District at Madgaon.

4.5. Suggested action points

Re-allotment of in-operational plots needs to be completed in a time bound manner. Skill training institutes that cater specifically to the needs of the Industrial units need to be set up to function as link between Industries and ITIs and Technical Institutes. In this direction, the **Pradhan Mantri Kaushal Vikas Yojana (PMKVY)** needs to be effectively implemented. Skill Development will also complement the **Make in India** initiative of the GoI. Traditional arts and craft also have to be developed with appropriate marketing link.

Chapter 5: Credit Potential for Export Credit

5.1. Introduction

Export credit is imperative to support export sector, to establish brand India image and to realize the potential of 'Make in India' concept. Under the scheme of export financing, banks provide loans to the exporters at two stages, as pre-shipment credit (working capital to purchase raw materials, processing, packing, transporting and warehousing of goods meant for export) and as Post Shipment finance against the shipping documents after liquidating the pre-shipment advance. The documents required for availing export credit are Bill of Lading / Airway Bill, Commercial Invoice cum Packing List and the Shipping Bill / Bill of Export.

In Goa, export credit is availed by export oriented Pharma companies, light engineering industry, defense manufacturing industry, iron ore, processed marine and cashew exporters. There are 157 pharma companies operating in Goa with 86 of them located in South Goa. Goa is a major iron ore exporting state and over 60% of Country's iron ore export is from Goa.

5.2. Credit flow in the last three years

The data on export credit is not available in the State as headquarters of most of the companies availing export credit are located in the metros and they get the export credit sanctioned there in respect of their units located in the State.

5.3. Assessment of Credit Potential for 2018-19

The projection for Export Credit for 2018-19 is as below:

(₹ Lakh)

Sr. No.	Activity	Unit Cost	PLP 2018-19		
			Phy. Units	Fin. outlay	Bank loan
1	Export Credit - Pre / Post Shipment Credit	200	175	35000.00	35000.00
	Total		175	35000.00	35000.00

Block-wise credit potentials are given in **Annexure I**.

5.4. Availability of Infrastructure, critical gaps & interventions required

The Sub office of Director General of Foreign Trade functioning at Panaji takes care of the licensing needs of exporters and implementation of export duty credit back scheme. The Mormugao Port Trust (MPT) handles all imports and exports in raw materials and finished products in Pharma, electronic and marine products, besides iron ore.

5.5. Suggested action points

Efforts are required to be made to improve condition of small and medium entrepreneurs so that they become competitive in the international market. They should have access to the latest technologies / quality infrastructure so that they are able to produce export-ready products. Awareness creation programmes are also required to make the MSME exporters aware of the latest policy developments and encourage them to avail export credit.

Chapter 6: Credit Potential for Education

6.1. Introduction

Loans upto ₹ 10 lakh to students for studies in India and ₹ 20 lakh for courses abroad are classified under priority sector. Loans to individuals for educational purposes including vocational courses upto ₹ 10 lakh irrespective of the sanctioned amount are also considered as eligible for priority sector. The Ministry of HRD, Department of education is also implementing an interest subsidy scheme for the benefit of students from the Economically Weaker Sections (EWS) with a total parental income upper limit of ₹ 4.50 lakh.

Govt. of India has announced a new Skill Loan Scheme aimed at providing a loan facility to individuals who intend to take up skill development courses with credit guarantee from National Credit Guarantee Trust Company for a maximum of 75% of the outstanding loan amount. No processing charges and margin will be charged on such loans. In South Goa, there are 06 ITIs, 09 Arts and Science colleges and 6 professional Colleges. There is a National Institute of Technology (NIT) Campus in the Goa Engineering College. Hotel Management Courses and Shipping courses are also in demand in the District as they offer job opportunities abroad.

6.2. The credit flow to the Education sector in South Goa during the last 03 years is as under:

(₹ Lakh)

GLC flow	2014-15	2015-16	2016-17
Education Loan	1324.00	2241.00	7015.00

6.3. Assessment of Credit potential for 2018-19

The credit potential assessed for Education during 2018-19 is as under:

(₹ Lakh)

Sr. No.	Activity	Unit size	Unit Cost	2018-19		
				Phy. Units	Fin. Outlay	Bank Loan
1	Education loan	No.	10	1600	16000.00	12000.00

Block-wise credit potentials are given in Annexure I.

6.4. Availability of infrastructure, critical gaps & interventions required

The education system in Goa is effectively streamlined in keeping with the National Curricular Framework 2005 (NCF 2005) to upgrade the quality of education at all levels. The state has already implemented the R.T.E. Act 2009 to ensure that no child in the age group of 6-14 years remains out of school. Goa has recorded 88.70 % literacy as per the census 2011. The Goa Scholar Scheme is being implemented by the State Government under which during 2016-17, 20 students were awarded Scholarships (17 for studying abroad). 158 beneficiaries are benefitting under the scheme for promotion of Science Education as on 31 March 2017.

There is a good network of Bank branches in the district to provide education loans. The cost of education has been growing over years and the loan offtake is likely to increase over the years. Inability to provide collateral security in the form of guarantee, inadequate credit worthiness of joint borrowers are some of the issues which makes it difficult for needy students to avail bank loan.

6.5. Suggested action points

Awareness campaigns in professional colleges needs to be done to popularize the education loan schemes of banks.

Chapter 7: Credit Potential for Housing

7.1. Introduction

Loans to individuals in non-metro centres upto ₹ 20 lakh for new purchase and ₹ 2 lakh for repairs are covered in the Priority Sector. For Metros, the limit is ₹ 28 lakh for purchase of new house and for non-metros it is ₹ 20 lakh. In Goa 2/3rd of the housing units are located in urban areas. The credit flow to Housing sector is mostly driven through NRIs and salaried class in Goa. Besides people from Metros like Mumbai and New Delhi also prefer to invest in Goa as a Holiday Home Destination Stay due to which the cost of the apartments / heritage houses of Goa is quite exorbitant. In Goa, there are no metropolitan Centres.

7.2. The credit flow to the Housing sector in South Goa during the last 03 years is as under:

(₹ Lakh)

GLC flow	2014-15	2015-16	2016-17
Housing Loans	32080.00	48125.00	94000.00

7.3. Assessment of Credit potential for 2018-19

The potential assessed for Housing is as under

(₹ Lakh)

Sr. No.	Activity	Unit size	Unit Cost	2018-19		
				Phy. Units	Fin. Outlay	Bank Loan
1	HL - New	No.	20.00	5100	102000.00	79500.00
2	HL - Repairs	No.	2.00	2800	5600.00	4200.00
	Total			7900	107600.00	83700.00

Block-wise credit potentials are given in **Annexure I**.

7.4. Availability of infrastructure, critical gaps & interventions required

The Dept. of Tribal Welfare, Govt. of Goa is implementing two schemes for house construction and repairs (*Atal Asra Yojana*), wherein, ₹ 2 lakh and ₹ 1 lakh assistance is provided to beneficiaries. Under *Pradhan Mantri Awas Yojana* (PMAY) which aims to provide Pucca Homes to all by 2022, Credit Linked Subsidy on Interest is available to the EWS / Lower Income Groups (LIGs) for loans upto ₹ 12 lakh taken from banks to construct a new house or for addition of rooms. Slum areas are also proposed to be developed under PMAY.

Recognising the importance of housing in rural areas, besides the refinance scheme, NABARD has introduced three more schemes, viz., Direct loan for Rural Housing (without grant), Direct loan for Rural Housing (Loan cum grant) and Composite loan for Rural Housing (with Income Generation Activities) for PACS / SCBs / DCCBs and Primary Urban Cooperative Banks.

The Goa Housing Board is an autonomous body constituted by the State Government which provides residential house sites & housing facilities to the Goan population at reasonable price. The Goa Housing Board also takes up Commercial Schemes and allots land for Institutions, Commercial etc. The Board has so far constructed 1648 EWS, 2009 LIG, 1127 MIG, 484 HIG, 186 shops, 21 offices and 2779 plots at various locations. Clear land titles are not available due to non-mutation of land for generations making it difficult to create effective mortgages for extending housing loan. Mutation / Partition / Conversion of land is a lengthy process.

7.5. Suggested action points

Single window system to clear the building plans is needed to minimise delays in getting approvals and licenses.

Chapter 8: Credit Potential for Renewable Energy

8.1. Introduction

Bank loans up to a limit of ₹ 15 crore to borrowers for purposes like solar based power generators, biomass based power generators, wind mills, micro-hydel plants and for non-conventional energy based public utilities viz. street lighting systems, and remote village electrification are eligible to be covered under this sector. For individual households, the loan limit is ₹ 10 lakh per borrower.

The cost of investment of renewable energy sources is on the higher side, but the advantages to environment are immense. Goa does not have any power generation facilities and entire energy requirement is drawn from the Western and Central grids. Solar based products - Solar water heaters and solar home lighting systems are becoming popular. Wind speed is inadequate to run wind mills. Biogas units are generally set up along with dairy units.

8.2. Due to lack of appropriate codes for recording the credit flow to non-renewable sources of energy, GLC flow to this sector exclusively is unavailable.

8.3. Assessment of Credit potential for 2018-19

The potential assessed for renewable sources of energy is as under:

(₹ Lakh)

Sr. No.	Activity	Unit size	Unit Cost	2018-19		
				Phy. Units	Fin. Outlay	Bank Loan
1	Solar water heaters (100 – 500 LPD)	No.	0.65	430	280.00	210.00
2	Solar Street Lighting	No.	0.27	250	68.00	51.00
3	Solar Home Lighting (40- 300 Wp)	No.	0.30	275	82.00	61.00
4	Solar irrigation pumps	No.	5.13	15	77.00	58.00
5	Biogas plant	No.	0.30	140	42.00	32.00
6	Bio Briquetting machines	No.	4.00	9	36.00	27.00
	Total			1119	585.00	439.00

Block-wise credit potentials are given in **Annexure I**.

8.4. Availability of infrastructure, critical gaps & interventions required

Goa Energy Development Agency (GEDA) is the Nodal Agency under the Ministry of New and Renewable sources of Energy (MNRE) implementing the centrally sponsored schemes. MNRE provides subsidy for Solar PV systems and Solar Pumps. The State Agriculture Dept. and KVIC are the Nodal Departments for biogas development.

During 2016-17, to meet the Solar Renewable Power Obligation (RPO) requirement, 25 MW Solar power is being procured through Solar Energy Corporation of India (SECI), and to meet the Non Solar (RPO), 53 MUs of Wind power has been purchased through NVVNL, a subsidiary of NTPC. The State Government is also providing illumination at beaches through solar powered lights. All the street lights have also been provided with LED fixtures / bulbs. Almost 100% subsidy is available for biogas installation. The State Govt. has also proposed to install roof top solar panels for Govt. buildings.

8.5. Suggested action points

The dairy farm owners with 4-5 animals could be made to set up of bio gas units. Trained masons should construct / install the biogas units. The unit cost of biogas units also need to be reassessed by the State Govt. as actual construction costs are higher than the State Govt. approved unit costs. Solar panels on reservoirs / canals of Irrigation projects could be considered on the lines of Narmada Canal project in Gujarat to produce power as also arrest the evaporation losses of water in the canals.

Chapter 9: Credit Potential for Others

9.1. Introduction

In terms of revised RBI guidelines on PSL, loans not exceeding ₹ 50,000/- per borrower extended to SHG / JLG, loans to distressed persons to prepay their debt to non-institutional lenders, overdrafts on PMJDY accounts up to ₹ 5,000/- and loans sanctioned to State level SC / ST State Organisations for purchase and supply of inputs and/or marketing of the outputs are covered under this sector.

In Goa, SHG concept has reached saturation stage while the JLG concept is gaining ground. Due to low levels of poverty, the scope for further SHG formation and credit linkage is less. As on 31 March 2017, cumulatively 3420 SHGs were formed in South Goa District of which 1002 were credit linked with a total loan o/s of ₹ 99.25 lakh. As on 30 June 2017, 625 JLGs were formed, 502 credit linked with limit outstanding of ₹ 15.06 crore.

9.2. Data on year-wise GLC flow to this sector exclusively is unavailable.

9.3. Assessment of Credit potential for 2018-19

The credit potential assessed for this sector during 2018-19 is as under:

(₹ Lakh)

Sr. No.	Activity	Unit size	Unit Cost	2018-19		
				Phy. Units	Fin. Outlay	Bank Loan
1	SHG Loans	No.	1.50	1750	2625.00	2625.00
2	JLG Loans	No.	1.25	350	438.00	438.00
3	PMJDY loans	No.	0.05	700	34.00	34.00
	Total			2800	3097.00	3097.00

Block-wise credit potentials are given in **Annexure I**.

9.4. Availability of infrastructure, critical gaps & interventions required

The SHGs in the District need to be encouraged to take up income generation activities. For this, NABARD schemes like (i) Micro Enterprise Development Programme (MEDP), (ii) Livelihood EDP (LEDPE) and (iii) Rural Mart Scheme under which grants can be extended for training / capacity building of the SHGs and setting up of a marketing outlet for selling their product / produce can be assessed. The State Rural Development Agency and the Goa State Urban Development Agency are implementing the State Rural Livelihood Mission (SRLM) and the National Urban Livelihood Mission (NULM).

The JLG concept is relevant to Goa in the Farm Sector as the State has many tenant farmers / farmers with no legal title to the land. Such farmer groups can be financed as JLGs to meet their short term credit requirement and to ensure that they do not borrow from non-institutional sources / take Gold Loans. Activity specific JLGs in the Non-Farm Sector like rural artisans, handicraft workers can also be supported as JGs.

9.5. Suggested action points

Banks need to come forward in identification of potential SHGs and conduct the MEDPs. The SHGs are also supported by NABARD to attend various exhibitions / marketing events at the State / National level. There has to be a convergence of the efforts of the Government Departments / NABARD / Banks in supporting the microfinance movement in Goa. Banks need to come forward to implement JLG scheme in a project mode through BCs.

Chapter 10: Infrastructure Support

Public investment in infrastructure is an indispensable driver of economic growth of the State / Country. Infrastructure includes the basic facilities, services and installations needed for functioning of a community or society, such as irrigation facilities, drinking water, storage facilities, power, transport, communication systems, schools, health centres, sanitation, etc. As public infrastructure projects require huge financial investment, they are normally built the State Government / its Corporations or funded by the GoI.

10.1 Infrastructure - Public Investment

10.1.1. Goa consistently ranks among the top three states in all round development, measured by its high socio-economic indicators. The key infrastructure indices of Goa are as under:

Road network	10,768 Km (260 Km National Highways)
Rail network	167 Km (105 Km - Konkan Railway and 62 Km - SWR)
Navigable internal waterways	255 Km
Ports	01 Major (Mormugao Port Trust - MPT), 05 Minor
International Airport	01 - Dabolim in Mormugao Block, South Goa District
Power demand	500 Mw
No. of industrial estates	20
Operating industrial units	4000
Key Industries	Pharmaceuticals, Fisheries, Tourism & Mining

The state has the highest per-capita-road-to-man ratio in the country. National Highways 17 and 4A pass through Goa. The construction of the 2nd Zuari Bridge on NH 17 has commenced in the District with funding from GoI. Construction of a 4-lane by-pass road for Madgaon city along the NH 17 is also going on. The inland water transport for cargo / ferry service is looked after by Captain of Ports. The inland waterways are used mostly for iron ore transport.

Goa has an allocation of approximately 460 Mw of Power from NTPC stations and 28 Mw from NPCIL. The power is supplied through neighbouring State Grids. The State does not have any power generation of its own except a 48 Mw Naphtha base power plant of M/s Reliance Salgaonkar Power Co. Ltd., through which 36 MW power is generated. Based on a targeted GSDP growth rate of 12%, the power requirement is expected to grow by around 5% year-on-year. Renewable sources of energy, especially solar power need to be considered by State Govt.

As regards Social Infrastructure, there are 03 Engineering Colleges, 01 Polytechnic, 01 Law College, a catering college and several Industrial Training Institutes (ITIs) and general education colleges in South Goa. The District has good health infrastructure with 08 Govt. and 46 private hospitals. There are 11 Primary Health Centres in the District. The construction of the District Hospital at Madgaon is presently underway.

There are two major water storage structures in the District, viz., Salaulim Dam in Sanguem and Chapoli Dam in Canacona with storage capacity of 227.16 MCM and 10.72 MCM respectively. The Salaulim water supply scheme is the largest amongst all the regional water supply schemes having a capacity of 160 MLD. The Chapoli dam provides drinking water supply of 15 MLD.

10.1.2. Rural Infrastructure Development Fund (RIDF)

This fund was set up in NABARD in 1995-96 to finance infrastructure projects of State Governments in the fields of Agriculture (Irrigation / Land Development / Soil Conservation / Storage Structures), Rural Connectivity (Roads / Bridges) and the Social Sector (Rural Drinking Water Supply / Health care / Sanitation). Presently the XXIII Tranche of RIDF is in operation. The position of projects sanctioned under various tranches of RIDF as on 31 March 2017 in the district is given below:

Tranche	RIDF I to XI	RIDF XII to XVII	RIDF XVIII onwards	Total
Rural Connectivity - Roads & Bridges				
No. of Projects	80	3	8	91
Of which, completed	75	2	2	79
RIDF Loan (₹ Crore)	15.49	69.91	22.89	108.29
Agriculture & Allied Activities - Irrigation				
No. of Projects	14	0	1	15
Of which, completed	13	0	0	13
RIDF Loan (₹ Crore)	16.21	0	51.88	68.09
Social Sector – RDWS / Sewerage / Health Centres				
No. of Projects	10	0	4	14
Of which, completed	10	0	0	10
RIDF Loan (₹ Crore)	14.6	0	226.65	241.25
Total				
No. of Projects	104	3	13	120
Completed Projects	98	2	2	102
RIDF Loan (₹ Crore)	46.30	69.91	301.42	417.63

As on 30 September 2017, the list of ongoing RIDF projects in South Goa District is as under:

No.	RIDF Tranche	Name of the Project	RIDF Loan (₹ Crore)	Implementing Department
1	XIX	Augmentation of the LIS at Naikaband by lifting water from SIP, Sanguem Block	51.88	WRD
2	XXI	Upgradation of Chicalim Cottage Hospital, Mormugao Block	26.69	GSIDC
3	XX	Construction of Curchorem PHC, Quepem Block	35.93	GSIDC
4	XX	Construction of Cansaulim PHC, Salcete Block	7.02	GSIDC
5	XXI	Ponda Sewerage Scheme – Ponda Block	158.29	SIDCGL
		Total		

In addition to the above, under the previous tranches of RIDF, Shiroda PHC, Flood Protection Works at Sunset Beach – Betalbatim, Bridges like Cavellissim Assolna / Varca Talaulim and several Roads, Minor Irrigation Schemes and Anganwadi Centres have been completed in the District.

10.1.3. Sector wise Infrastructure Requirements / Critical Interventions**A. Agricultural Marketing Infrastructure**

(i) Infrastructure in the existing APMC market yards has to be upgraded with modern warehouses / Godowns / Cold Stores along with an enabling infrastructure for procurement of agricultural produce.

- (ii) eNAM initiative of GoI to be implemented in Goa on a priority basis to give the producers a level playing field in selling his produce as also free them from price manipulations by traders.
- (iii) Produce specific FPOs have to be supported so that aggregation occurs followed by supply and value chain network.
- (iv) The Warehousing Infrastructure Fund of NABARD under which loan assistance at low rates of interest (presently 4.75%) can be availed for creating this infrastructure.

B. Designated Food Park

- (i) There is a need to set up a dedicated food park in Goa so that value addition of farm produce occurs.
- (ii) Assistance under NABARDs Food Processing Fund can be extended to the units in these food parks.
- (iii) A strong Agro Processing sector in the state will encourage crop production, prevent wastage of perishable produce and the producer will earn more.

C. Land reforms

- (i) Land reforms are required so that tiller gets right to land and is able to access institutional credit.
- (ii) The Act should have provisions to support contract farming in the agricultural land presently kept fallow. Absentee landlords will thus be able to lease out their lands without fear of losing their lands.

D. Irrigation Network

- (i) There is a need for desilting and lining of existing natural springs, canals and irrigation waterways.
- (ii) Tail end distributaries need to be constructed for Salaulim irrigation project areas.
- (iii) Farm ponds (Jalkunds) or any other water harvesting / conservation structure should be made mandatory for holdings having a certain threshold area; say 5 Ha.
- (iv) Water User Associations have to be revived for maintenance and upkeep of irrigation structures.

E. Organic Agriculture

- (i) Goa being a small state and as most plantation crops are by default organic has the potential to be declared as an Organic State like Sikkim.
- (ii) The organic certification set-up has to be organized in the State. Protocols have to be popularized.
- (iii) Setting up of bio fertilizer / bio-pesticide production units. Subsidy support is available from NABARD under the National Programme on Organic Farming (NPOF) scheme.
- (iv) Setting up of niche markets for organic produce.

F. Other Infrastructure required

- (i) Strengthening of jetty infrastructure with ice factories and cold storage support (fisheries sector).
- (ii) Infrastructure for primary processing and grading of local agriculture produce.
- (iii) Modernization of the Goa Dairy – Plant & Machinery and Feed Mixing Units.
- (iv) The Sanjivani Sugar Mill has to be upgraded and more area brought under Sugarcane cultivation.
- (v) Devt. Of sewerage system in villages / coastal areas.
- (vi) Setting up of marketing outlets to sell produce of local farmers / SHGs.

In the Social infrastructure field, the rural dispensaries / Primary Health Centres in many of the villages are in a dilapidated state and need renovation. Many of the rural Government Schools also are in need of renovation / repairs. The State Government can utilize the low cost funding available under NABARDs RIDF for building up the required infrastructure in the State.

10.2 Social Infrastructure involving Bank Credit

As per RBI Priority Sector Lending Directions, Bank Loans up to ₹ 5 crore per borrower for building social infrastructure like schools, health care, drinking water and sanitation facilities in Tier II to Tier VI centres (less than one lakh population) are classified as PSL. Investments in this sector, especially in

the rural areas, will create new employment opportunities, increase income and improve delivery of other services to the rural poor.

10.2.1 Introduction

Creation of social infrastructure is mainly in the domain of public investments. However, the growing population, rising income levels and needs - better education, health care, Drinking Water, Sanitation, Waste / Garbage Disposal, Treatment Plants is leading to private investments in these fields. Except Mormugao, all other places in the district are in the Tier II to VI centre category.

As per Census 2011, South Goa has a literacy rate at 87.6% (male - 91.7%, female - 83.5%). The school infrastructure is also adequate with 645 primary schools, 241 middle schools and 268 secondary and higher secondary schools. The health infrastructure is also quite adequate. The sanitation network though has to be developed in the district. Due to heavy tourist arrivals, generation of garbage is increasing exponentially. Solid Waste Management has become a big challenge. State Government must create sufficient number of Solid Waste Management Plants to take care of the wet / dry garbage generated in the State.

10.2.2 Data on year-wise GLC flow to this sector exclusively is unavailable.

10.2.3. Assessment of Credit Potential for 2018-19

The credit potential for development of social infrastructure with bank credit through private participation for 2018-19 is assessed as under:

(₹ Lakh)

Sr. No.	Activity	Unit Size	Unit Cost	2018-19		
				Phy. Units	Fin. Outlay	Bank loan
1	Construction of toilet in individual homes	No.	1.37	2500	3425.00	2569.00
2	School toilet blocks & drinking water facility	No.	21.00	110	2310.00	1733.00
3	Transport vehicles in health sector (emergency vehicles, hearse vans, etc.)	No.	15.75	35	551.00	413.00
4	Paper and plastic waste recycling unit	No.	21.00	9	189.00	142.00
5	Waste disposal by composting/biogas units in hotels and bakeries	No.	2.10	175	368.00	276.00
	Total			2829	6843.00	5132.00

Block-wise credit potentials are given in **Annexure I**.

10.2.4. Availability of Infrastructure, critical gaps & interventions required

The Rural Health Care centre at Shiroda has been built by GSIDC with NABARD RIDF assistance, but it facing shortage of regular doctors. Two more health centres / hospitals at Curchorem and Chicalim respectively are also being constructed with RIDF assistance.

The State Government has developed a Master Sewerage Plan for Goa, under which it proposes to cover all the major towns with sewerage network. The sewerage network is complete in Margao and Mormugao areas. The Sewerage Treatment Plants are also in place. The work on the Sewerage Scheme in Ponda Block is being carried out with RIDF assistance.

10.2.5. Suggested action points

The school infrastructure requires strengthening. It is estimated that 20% of the schools do not toilet blocks and many of the schools have dilapidated ones. This needs to be addressed in light of '*Swachh Bharat Abhiyan*' and toilet blocks have to be established in all the schools. The potable water availability in the schools also has to be addressed.

The rural hospitals in the district are also in need of urgent renovations. Most of the health care infrastructure is concentrated in the developed blocks of Salcete, Ponda and Mormugao. The remaining 04 blocks rely on the Rural Primary / Sub Health Centres. The health centres in these blocks need to be strengthened by addition of infrastructure / beds as well as with full time doctors. Very often, the patients visiting the rural hospitals have to be referred to the nearest Urban Health Centres for better care / facilities.

The State lacks well-knit sewerage network and majority of population is still dependant on traditional septic tank and soak pit system for the disposal of wastewater. Health hazards such as contamination of ground water or drinking water is due to the lack of adequate soaking capacity of the soil, letting of the waste water in open drains due to growing urbanization.

Chapter 11: Informal Credit Delivery System

11.1. Introduction

Inadequacies in access to formal finance has led to the growth of microfinance in India. In India microfinance operates through two main channels viz. (a) Banking system through SHGs under SHG – Bank Linkage Programme (SHG-BLP); through Joint Liability Group (JLG) bank lending programme and (b) through Micro Finance Institutions (MFIs) lending through individual and group approach. Microfinance sector helps policy makers in reaching out to the grass root level and complements GoI efforts in addressing issues like financial exclusion, providing livelihoods and empowering citizens, and women in particular.

25 years of SHG- Bank Linkage Programme

Quarter century back when the banking system was not tuned to extend a helping hand to the poor, women and other economically underprivileged sections of the society, an innovative approach to bring them together, creating a social collateral and enabling them to harness their economic potential through savings and credit had been conceptualized as Self Help Group Bank Linkage Programme.

The out of box idea of organizing financially excluded persons into a group and linking them to banks for saving and credit under an “Action Research Project” launched by NABARD in association with MYRADA in 1987 led to policy formulation with respect to formation and financing of Self Help Groups by banks.

A Pilot project on SHG Bank Linkage started with a modest target of 500 SHGs in 1992 surprised everyone with its astounding success – 4750 SHGs spread over 16 states and 1 UT formed & credit linked and bank loans of ₹ 606 crore. Since then this programme has taken a form of a movement and a tool to empower poor by linking them to door step banking. A journey which started with modest target of 500 SHGs in 1992 now boasts of 85.77 lakh saving linked SHGs with a bank deposits of ₹16114.23 crore and 48.48 lakh credit linked SHGs with outstanding bank loans of ₹61000 crore. All these are pointers to the sheer outreach of the SHG movement. Till date more than ₹2, 20,000 crore collateral free credit from banks has been availed by millions of rural poor through this mechanism. The Self-Help Group movement in India is *sui generis* because it is the largest coordinated savings led, self-managed door step banking Microfinance programme with participation of community at its core. Touching over 11 crore households, it has become the largest Microfinance programme in the world. This includes coverage of about 8.8 crore women SHG members under the programme.

The success of SHG-Bank linkage programme attracted the policy makers of the Government to launch social and poverty alleviation programmes in different states. GOI's flagship poverty alleviation programme the National Rural Livelihood Mission is also based on the SHG approach.

NABARD continues with its endeavor to fine tune policies in terms of extending promotional support to NGOs for forming SHGs, capacity building of bankers, NGOs/ VAs, training the SHG members in setting up micro enterprises and livelihood promotion through MEDP and LEDP. Digitisation pilot project ‘E - Shakti’ has been launched to infuse vibrancy in the SHGs by digitizing their data and updating the same on real time basis every month with an inbuilt concurrent grading mechanism and making it available to stakeholders primarily the banks for ensuring credit linkage of SHGs. Resilience of the movement be harnessed to provide seamless savings and credit services at affordable rate to the rural poor especially women.

11.2. Status of SHG – Bank Linkage Programme in South Goa

As on 31 March 2017, South Goa had 3420 SHGs linked to the banking system with total deposits of ₹ 160.71 crore. The total number of credit linked SHGs stood at 1002 with a total loan outstanding of ₹

99.25 crore. As poverty levels are low in Goa (5.9%) compared to the national average of 22%, the growth of microfinance has been slow. The credit linkage level is low in the district due to low level of motivation among SHGs in taking up Income Generating Activities (IGAs) and due to lack of support /guidance from the NGOs and Banks.

The District Rural Development Agency (DRDA) is the nodal agency of State Government in promoting SHGs. Goa State Rural Livelihood Mission (GSRLM) has launched the *Streeshakti* Programme in Goa under NRLM in 2015. Under NRLM, Community and Block Resource Persons are appointed to nurture the SHGs. Presently, Village Organizations (VOs) are being formed at block level, a type of SHG federation, having membership of all SHGs in the Block.

Two NGOs – Mineral Foundation of Goa and Jan Jagruti Saunstha have formed and credit linked 50 SHGs each in the State under a NABARD project. The Goa SCB and around 14 Commercial Banks have facilitated the progress of SHGs in the district. These banks need to play a proactive role in promoting SHGs on a mission mode.

11.3. Issues related to microfinance in the District

- 1) Many SHG accounts are dormant due to lack of activities or group disintegration.
- 2) There is duplication of members among 2-3 SHGs.
- 3) Many SHGs are not keen to take loans, as they are not into Income Generating Activities.
- 4) Skill / entrepreneurship is lacking.
- 5) SHG graduation into livelihood activities is virtually absent.
- 6) Awareness about banking procedures, govt. schemes are low among SHG members.
- 7) Members are unaware of the CC facility available for SHG loans.
- 8) Some SHGs function as Chits and lend to outside members.
- 9) Some SHGs close their operations after 5 years, take out their entire corpus (savings plus accrued interest) and divide among themselves.
- 10) More than one member of a family are members in the same group.
- 11) Sometimes the leaders utilise the loan proceeds for their personal activities; the other group members are unaware.
- 12) Inadequate training / lack of awareness among bankers about SHG concept.
- 13) MIS on SHGs not readily available with banks.
- 14) Issues on need for registration of SHGs for availing loans exceeding ₹ 5 lakh from cooperative banks need to be addressed.

11.4. Road Map for SHG-BLP

- 1) Capacity Building / Training of Self Help Promoting Institutions (SHPIs) / Bankers.
- 2) There has to be convergence of efforts on the parts of the Govt interventions (NRLM / GSRLM), NABARD and Banks to benefit the SHGs.
- 3) Dormant SHGs have to be revived with hand holding support or weeded out.
- 4) Potential SHGs have to be trained in IGAs and given Marketing Support.

SHG-BLP needs to re-invent itself and a shift is required from mere promotion of SHGs to providing livelihood opportunities to the SHG members in a calibrated manner through their skill building, production optimization, value chain facilitation and market linkage.

11.5. NABARD Initiatives

The Micro Enterprise Development Programme (MEDP) has been devised for providing training to matured SHG members for taking up IGAs. Grant assistance of ₹ 0.50 lakh is provided by NABARD for conduct of MEDPs for about 30 SHG members.

To support livelihood interventions, a scaled up model of MEDPs, the Livelihood Enterprise Development Programme (LEDP) has been devised under which grant assistance between ₹ 4.98 to 6.43 lakh is extended for training about 150 beneficiaries in Farm and NFS activities.

To support the marketing activities of SHGs, NABARD provides support to the SHGs in setting up stalls in various exhibitions like *Mahalaxmi Saras*, *Delhi Haat*, *Lokotsav*, etc. Under the **Rural Mart** Scheme, support is provided to SHGs to rent shops in the District / Block place for an initial period of 02 years.

Further, the **EShakti** initiative of NABARD will go a long way in removing the issues bankers face in financing the SHGs as details of each SHG member will be linked to his unique identity (Aadhaar Number) and uploaded in the web portal. This will also do away with duplication of members in different groups. The Women SHG Programme of GoI is being implemented by NABARD in North Goa District through various NGOs.

11.6. Financing through Joint Liability Groups (JLGs)

Following the success of the SHG-BLP, NABARD launched the scheme for JLGs in order to develop effective credit products for Small / Marginal / Tenant Farmers, oral lessees and share croppers, as also entrepreneurs engaged in various non-farm activities. JLGs are basically livelihood groups of 4-10 members who come together on the strength of the mutual guarantee to seek livelihood finance for pursuing an economic activity.

As title to land is a serious issue in Goa, it is expected that the institution of a JLG will enable the Small / Marginal / Tenant Farmer to access formal sources of credit. NABARD besides providing incentives for formation of JLGs, does capacity building of all stakeholders and also extends 100% refinance support to Banks on their lending to JLGs. JLGs can also be formed in NFS by linking activity based groups like rural artisans, handicraft workers, etc.

As on 30 June 2017, there are around 625 JLGs in South Goa, of which 502 are credit linked. The loan outstanding to JLGs for this period is ₹ 15.06 crore. The JLG projects have been implemented in the district by 02 NGOs and Ratnakar Bank Ltd.

11.7. Estimation of Potential for SHG-BLP in South Goa

Considering the low levels of poverty and presence of 3420 SHGs in the District, we can say that the SHG formation has reached a saturation stage and the potential for forming new groups is very limited. The number of credit linked SHGs in South Goa as reported by banks is 1002 as on 31 March 2017. Many of the banks report a SHG as credit linked only if it has a present loan outstanding while the figure has to be reported by including SHGs which have been credit linked even once in their life span and the present loan outstanding is NIL.

Block-wise details of potential available for promotion and savings linkage of SHGs & JLGs in the district is furnished in Annexure VI. Similarly, the potential for credit linkage of the SHGs / JLGs is furnished in Annexure VIIA. Formation of new SHG / JLG as also linking the new as well as old (repeat financing) is considered while estimating the potentials.

Chapter 12: Doubling of Farmer's Income by 2022

12.1 The Hon'ble Finance Minister in his budget speech delivered on 29th February 2016 envisaged provision of income security to the farmers going beyond the concept of food security and assured that Union Government will reorient its interventions in the farm and non-farm sectors to double the income of the farmers by 2022.

12.2 Doubling the farmers' income by 2022, in real terms is a big challenge and needs large scale revamping, reorientation and innovation in the initiatives. Farmer's income can increase through increasing total output and their prices, reducing production costs through lowering input use and/or reducing input prices, diversifying production mix towards more remunerative enterprises and providing earning opportunities in non-farm sector. Apart from the traditionally known risks to farmers, climate change is an additional risk factor that can cause loss of farm income. Apart from this, access to good physical, economic/financial, social infrastructure such as marketing and processing facilities, godowns and cold storage capacity, banking network that can provide much needed capital, educational, medical facilities and training facilities for imparting skills that market demands is important. For it would enhance the productive capacity on farms, help farmers realise better prices, reduce wastage, enhance shelf life, adopt better technology, meet capital needs and improve quality and quantity of livelihoods and improve employability on better terms. Risk coping and mitigation through various mechanisms including insurance would also help indemnify loss of income.

12.3 Hon'ble Prime Minister, also gave a seven-point strategy to achieve doubling of agriculture income. The seven key strategies spelt out by Prime Minister are as follows;

- i. Big focus on irrigation with large budgets, with the aim of "per drop, more crop."
- ii. Provision of quality seeds and nutrients based on soil health of each field.
- iii. Large investments in warehousing and cold chains to prevent post-harvest crop losses.
- iv. Promotion of value addition through food processing.
- v. Creation of a national farm market, removing distortions and e-platform across 585 stations.
- vi. Introduction of a new crop insurance scheme to mitigate risks at affordable cost.
- vii. Promotion of ancillary activities like poultry, beekeeping and fisheries.

12.4 Dr. M S Swaminathan, father of green revolution in India, is optimistic of doubling income by bridging the large gap between potential and actual yield per hectare. He has suggested five steps for doubling farmers' income as follows;

- i. Enhance small farm productivity and stability of production through soil health care, water harvesting and management, choice of appropriate technology and inputs, credit and insurance and finally opportunities for remunerative and assured marketing;
- ii. Focus on the knowledge, skill, credit, land ownership and empowerment of women farmers;
- iii. Include high value crops, horticulture, animal husbandry, agro-forestry in the farming systems;
- iv. Promote commercial use of the whole biomass of the crop; and,
- v. Fix the procurement price at cost C2 plus 50 per cent to enable small farmers enough surplus

12.5 Some indicative interventions for doubling of farmers' income could be:

12.5.1 Enhancing Production through Yield Increase: This includes:

- 1) Adoption of recommended / improved agronomic practices, improved technologies.
- 2) Farm mechanization
- 3) Planning profitable crop mix that can maximize aggregate income.
- 4) Reducing crop losses through Integrated Pest Management (IPM).
- 5) Varietal improvement through conventional breeding or biotechnology (long term)

12.5.2 Leveraging Water Resources for Enhancing Farm Incomes:

- 1) Adoption of drip & sprinklers
- 2) Watershed management & conjunctive use of water,
- 3) Agronomic practices, such as soil additives and mulching, System of Rice Intensification (SRI),
- 4) Rainwater harvesting, farm ponds, Water Users Associations

12.5.3 Income Enhancement through Diversification:

- 1) Diversification towards high value crops.
- 2) Diversification towards livestock, poultry and fisheries and other feasible allied livelihood activities.
- 3) Supplementary and complementary non-farm activities, especially for small holders who do not possess adequate land.

12.5.4 Reducing Costs through Low Input Agriculture:

Organic farming, minimizing external input, sustainable agriculture, precision farming, etc. may be promoted with a view to reducing costs of cultivation.

12.5.5 Promotion of Integrated farming system approach:

Promotion of Integrated farming system approach involving synergic blending of crops, horticulture, dairy, fisheries, poultry, etc.

12.5.6 Income Enhancement through Professionalization:

Providing training and skill transfer to farmers can be very useful in enhancing the income of farmers.

12.5.7 Risk Management:

- Taking insurance cover for crops
- Providing weather, price, market advisories
- Ex-ante adaptation strategies like investing in wells, mixed farming, sharecropping, stocking grains
- Ex-post strategies like replanting, changing input use and thinning the standing crop.
- Price stabilization mechanisms such as building bonds with commission agents / traders, entering into contracts, etc.

12.5.8 Convergence Model:

Building synergy by including various programmes and policy initiatives of:

- 1) **Government of India** viz. PMKSY, Paramparigat Kheti, e-NAM, PMFBY, Skill India, Direct Benefit Transfer (DBT), PMJDY, FDI in food processing sectors, etc.,
- 2) **NABARD**: (FPO, Watershed, Wadi, Digital Village, Less cash Village, SHGs, JLGs, FI programmes, Seed Village, Farmers Club, etc.)
- 3) **State Government**: Rural infrastructure creation through RIDF, Various State sponsored programmes / schemes.
- 4) **Corporate Social Responsibility** initiatives.

12.5.9 Leveraging Bank credit for:

- 1) Warehousing and cold chains to prevent post-harvest crop losses.
- 2) Creating Storage capacities at production as well as marketing centres.
- 3) Seed Production Units
- 4) Solar pumping units and solar based energy production may be encouraged under GOI scheme through credit support and skill development.
- 5) Micro-irrigation Systems
- 6) Organic fertilizer Units

- 7) Soil testing Labs
- 8) Veterinary Polyclinics
- 9) Value addition and Food Processing Infrastructure
- 10) Financing working capital and the entire value chain credit needs of FPOs.

The extent of synergy among all stakeholders is crucial for ensuring success of this initiative.

12.6 State / District level Status and Strategies

The economy of Goa is primarily driven by tourism and mining followed by agriculture and fisheries activities. Most of the farmers are not fully dependent on agriculture and they have supplementary sources of income through mining related activities, business, private or Govt. jobs and foreign remittances. Though cultivation income is not a major source of income for farmers, it is imperative to take efforts to double their income levels. The cultivated area is more or less stagnant and production / productivity levels are also unimpressive in the State.

Farming could be made commercially attractive, with the following interventions in the State:

- 1) Promotion of Farmer Producer Organizations (FPOs) - Aggregation models.
- 2) Promotion of floriculture units.
- 3) Focus on Agro and Food Processing – Value Addition
- 4) Intensive Agriculture with focus on intercropping and dairy as an allied activity.
- 5) Exploitation of potential for inland fisheries / ornamental fisheries.
- 6) Increase in the net irrigated area by improving the existing irrigation structures through desilting, maintenance, building of check dams and tail end distributaries.
- 7) Farm Mechanization to reduce labour costs / perform agricultural operations on time.
- 8) Storage Infrastructure creation – Warehouses / Godowns / Cold Storages
- 9) Strengthening of the Agricultural Market Yards and implementations of the reforms especially **contract farming** in the State

Coverage of plantation crops like Coconut, Arecanut and Cashewnut under the PM Fasal Bima Yojana also needs to be considered by the State Government.

The State Government is also planning to give a “BIG” push to Goan Agriculture by branding the agricultural produce under the State Brand – BIG – Born in Goa. Through this a brand image will be created and promotion / marketing done all over the country / globe at premium prices. An IT platform “AGRICLOUD” is also proposed which will introduce the farmer / producer to the buyer of the produce.

Chapter 13: Skill India Scheme

13.1. Introduction

"National Skill Development Mission", launched on 15th July 2015, aims at training 40 crore youth in different skills by 2022. Under this mission, there are four initiatives of the Ministry of Skill Development and Entrepreneurship:

- (i) National Skill Development Mission,
- (ii) National Policy for Skill Development and Entrepreneurship 2015,
- (iii) Pradhan Mantri Kaushal Vikas Yojana (PMKVY) and
- (iv) Skill Loan Scheme.

Skill India Mission Directorate is supported by three institutions - National Skill Development Agency (NSDA), National Skill Development Corporation (NSDC), and Directorate General of Training (DGT). Seven sub-missions have been proposed initially to act as building blocks for achieving overall objectives of the Mission. They are:

- (i) Institutional Training, (ii) Infrastructure, (iii) Convergence, (iv) Trainers, (v) Overseas Employment, (vi) Sustainable Livelihoods, (vii) Leveraging Public Infrastructure.

Sector Skill Councils are set up as autonomous industry-led bodies by NSDC. Till date, the NSDC Board has approved proposals for 38 Sector Skill Councils, of which agriculture is one.

13.2. Agriculture Sector Skill

It is estimated that more than 50% of Indians are employed in Agriculture and allied activities. While the available arable land is constant at 161 m Ha and growth in agriculture sector is stagnant at 3%, the demand for agriculture produce and food products is ever increasing due to rise in population. To tackle the issues of improper farm management practices and loss in post-harvest handling, there is a requirement for specific set of skills in the field of Agriculture. Considering this, Agriculture Skill Council of India (ASCI) was set up in January 2013 as a Section 25 company under Companies Act, 1956.

ASCI aims at bridging the gap between lab and farms, upgrade skills of cultivators, agricultural labourers and of those engaged directly /indirectly in the organized and unorganized Agriculture and Allied industry. ASCI also implements the *PMKVY* under which the trainees are offered financial reward and government certification on successful completion of training and assessment, which will help them in securing jobs.

13.3. Potential in the District

In South Goa, labour is in short supply. For specific operations like harvesting of sugarcane, labour has to be imported from Maharashtra. SRI technique requires trained labour for single seedling transplantation. In major plantation crops like coconut and Arecanut, labour is unavailable for doing regular tree maintenance, pest control, fungicide spray and harvesting of nuts. Trained technical hands are unavailable for doing grafting, layering, etc., in horticultural crops. As a result private nurseries transport planting materials from outside the State, instead of producing them on farm. There is shortage of trained manpower for operation as well as maintenance of farm implements.

The Department of Animal Husbandry lacks adequate animal handlers and skilled assistants to assist block level veterinary offices. Even to manage dairy farms, labour is brought from outside. In Fisheries sector, power blocks are being promoted to overcome the problem of labour requirement on trawlers.

Institutions like KVKs, Polytechnics and Marketing Federations like Goa Bagayatdar and Adarsh Coop Society should be encouraged to be affiliated to ASCI and provide certified courses to select youth. ASCI has standardized 115 designated courses in agriculture sector.

As a major step towards supporting skills and training in the fisheries sector, ASCI has signed an MoU with National Institute of Oceanography (NIO), Goa on 21 June 2017. NIO and ASCI will collaborate in the various areas of capacity building programs by bridging gaps and upgrading skills of local workers in the field of aquaculture and fishery sciences.

13.4. Skill India relating to Non Agriculture aspect

Manufacturing and service sectors are the key drivers of the Indian Economy. Skill development in these sectors is critical for achieving faster, sustainable and inclusive growth and for providing decent employment opportunities. The cornerstone of the manufacturing policy for the Twelfth Plan was to create 10 million additional jobs in the manufacturing sector by focusing on labour intensive manufacturing and by suitable amendments to the labor regulatory framework, so that manufacturing becomes a genuine engine of employment growth in the country. Besides manufacturing, construction, trade, transport, hospitality and other services are the sectors where skill development can lead to a faster growth in employment opportunities, when aligned to the market needs.

13.5. Status at State level

In Goa, The Directorate of Craftsmen Training has been tasked with launching the Skill Development Mission to work at achieving excellence in the field of vocational training and devise plans to meet sector-specific skills. State Directorate of Craftsmen Training is implementing two major programmes of Government of India, viz, Craftsmen Training Scheme (CTS) and Apprenticeship Training Scheme (ATS) (under Apprentices Act, 1961).

The objectives of the above schemes are to ensure steady flow of skilled manpower in industries and also to reduce unemployment amongst the educated youth by equipping them with the required skills, education and discipline for suitable industrial employment as well as self-employment. Both the above programmes are implemented through the following organizations:

- 1) Industrial Training Institutes and Expansion Centre – Trainee is given National Trade Certificate by National Council for Vocational Training (NCVT) and Trade Certificate by State Council for Vocational Training (SCVT) on completion of training.
- 2) Apprenticeship Training Scheme – On completion of training, apprentice gets National Apprenticeship Certificate by National Council for Vocational Training.

A NSDC skill gap study has estimated the skill gap in manufacturing & service sectors as below:

Incremental Human Resource Requirement - Manufacturing			Incremental Human Resource Requirement – Service sector	
Skill Levels	2012-17	2017-2022	2012-17	2017-2022
Minimally Skilled	3203	4180	7350	8876
Semi-Skilled	7430	9696	8558	11142
Skilled	1530	1782	5287	6696
Total	12163	15658	21195	26714

Considering the low level of capacity available, NSDC has estimated a 31% gap in meeting the skill demand by 2017 and 40% gap by 2022. State Govt. has to design a programme for systematically increasing the capacity building and orient the skill courses according to the industry needs.

In Goa, there are 14 ITIs, 16 Vocational Training Institutes and 31 colleges offerings employment oriented professional courses. 10 Government ITIs and 02 private ITIs have been registered as Vocational Training Providers (VTPs) under the Skill Development Initiative (SDI) Scheme. 61 Institutes are registered under Human Resource Development Federation (HRDF) Society, with an intake capacity of approx. 3,260 trainees per year. 987 trainees have been enrolled for the HRDF courses during 2016-17.

The Govt. has also enabled vertical mobility for ITI students in diploma and degree courses. Placement fairs were organized for the passed out trainees of ITIs. During 2016-17, 17 new courses have been introduced in various Government ITIs like, Mechanic Motor Vehicle, Mechanic Diesel, Fitter, Turner, Machinist, Welder, Mechanic Electronics, Food and Beverage, Guest Service Assistant, Computer Hardware & Network Maintenance, Welder (Fabrication and Fitting), Electrician and Attendant Operator (Chemical Plant) at various Government ITIs. Setting up of ITI in Assolna under Hospitality, Hotel Management and allied trades is under process.

During the academic year 2016-17, 3,526 trainees were enrolled in 14 Government ITIs and 267 trainees in 06 Private ITIs. 3,027 trainees have been placed in 323 establishments in 44 designated trades under Apprentice Act, out of which 643 seats are utilized for training in 101 different public / private establishments.

13.6. Status at District level

South Goa has 04 ITIs in Govt. sector with a capacity of 1384 students and 3 ITI / related training institutes with capacity of 155 students. There are 06 colleges offering skill based professional courses.

The major manufacturing sector industries in the District are pharmaceutical, automobile & auto repair parts, electrical and electronics, ship building, food and beverages, steel, paper and packaging, rubber, plastics, petroleum products and handicrafts. Tourism / Hospitality industry is the major services sector activity in South Goa. Besides, Retail Trade, IT, Logistics, Health care and Education are the other service sector activities.

Identification of the current and future skill gaps is essential. Semi-skilled workforce like fitters, electricians, machinists, turners and skilled workforce like B Pharm, Degree / Diploma Engineers, Naval Architects, Food Processing Specialists, Quality Control & Compliance Specialists are required for the various Pharmaceutical, Steel, Auto and Ship Building industries in the District.

Chapter 14: Climate Change

14.1. Introduction

Climate change has become real and tangible, affecting people's lives worldwide. It is a major challenge for agriculture, food security and rural livelihoods. As indicated in Intergovernmental Panel on Climate Change (IPCC) in its Fifth Assessment Report released in March 2014, poor, marginalized, and rural communities are likely to be hit hardest by climate impacts. For these vulnerable groups, climate change acts as a "risk multiplier" worsening existing social, economic, political, and environmental stresses.

India has seen an increase of 0.4 °C, in the mean surface air temperature over the past century (1901–2000). It has been estimated that a 2.0 to 3.5 °C increase in temperature, and the associated increase in precipitation, can lower agricultural GDP by 9 - 28% (Source: 12th Five Year Plan). Similarly, rising sea levels will cause displacement along coastlines and threaten freshwater sources and mangrove ecosystems. Floods will increase in frequency and intensity. Over 50% of India's forests are likely to experience shift in forest types, adversely impacting associated biodiversity, livelihoods base and regional climate dynamics.

The National Action Plan on Climate Change (**NAPCC**) was released to mitigate and adapt to climate change on 30 June 2008. A range of measures are envisaged through the following 08 broad missions:

- 1) National Solar Mission
- 2) National Mission for Enhanced Energy Efficiency
- 3) National Mission on Sustainable Habitat
- 4) National Water Mission
- 5) National Mission for Sustaining the Himalayan Ecosystem
- 6) Green India Mission
- 7) National Mission for Sustainable Agriculture
- 8) National Mission on Strategic Knowledge for Climate Change

Based on NAPCC, each state prepares the State Action Plan for Climate Change (**SAPCC**).

14.2. Climate Change and its probable effects

14.2.1. In Goa

The high range Western Ghats on the Eastern boundary and the Arabian Sea on the West define a unique weather pattern for Goa with South West Monsoons from June to September, cooler months from October to February and hot summers from March to May. However, over the years, it is seen that the weather pattern is changing in Goa. During the last consecutive 2 years, the rainfall has been less than the average. Yields of plantation crops like Mango and Cashew have been fluctuating with changes in humidity / misty conditions. The fish catch, fish type in Goan waters is also changing probably due to ocean warming.

CRZ violations / haphazard urbanization is also taking a toll on Goa's climate and we see frequent water logging in the cities.

According to the 'ATLAS on Vulnerability of Indian Agriculture to Climate Change' developed by National Initiative on Climate Resilient Agriculture (NICRA), Goa has been ranked 1st among the 32 States / UT taken up for vulnerability assessment, which underlines the seriousness with which climate change effects need to be considered in the State.

Being a coastal State, Goa is extremely vulnerable to rise in Mean Sea Levels (MSL). A TERI study (2014) observed that there is an increasing trend of 1.26 mm / year in the MSL. Over a period of years this will lead to ingress of sea water, loss of habitations, freshwater sources and damage the mangrove and other coastal biodiversity. This rise together with extreme rainfall could flood coastal as well as inland Goa.

The State Level Steering Committee on Climate Change (SLSCCC) under the Chairmanship of the Chief Secretary, Govt. of Goa has been constituted by the State Government in September 2016. Department of Science Technology and Environment (DSTE) is the nodal department and Member Secretary, Goa State Biodiversity Board is the nodal officer of the Committee. The terms of reference of the SLSC is to scrutinize and recommend the relevant Climate Change (adaptation / mitigation) projects to **National Implementing Entity (NIE)** i.e. NABARD for onward submission to the MoEF & CC for consideration.

The first meeting of the Committee was convened on 21 March 2017. The meeting doubled up as a Capacity Building / Awareness Workshop for the members of the Committee. The faculty support for the workshop was provided by NABARD and the modalities for preparation of the SAPCC and the ways to tap various climate finance avenues were explained to the State Government Officials. The draft SAPCC has been prepared by the Nodal Department, the same, however needs fine-tuning to cover all relevant aspects of vulnerabilities faced and climate change model/s to be adopted.

14.2.2. In South Goa District

Goa comes under the Coastal Regulation Zone (CRZ). According to the 'ATLAS on Vulnerability of Indian Agriculture to Climate Change', Goa (incl. South Goa district) ranked 391 under 'Exposure', 472 under 'Sensitivity', 231 under 'Adaptive Capacity' and 539 under 'Overall Vulnerability'. The effects of Climate Change on Western Ghats-Coastal region where South Goa lies, could manifest in the following ways viz., precipitation could be more intense with less rainy days, temperatures could gradually increase, crops could be affected, forests (and dependent biodiversity) could be made more vulnerable, sedimentation could increase sharply and incidence of floods & droughts might rise sharply.

14.3. Strategies for dealing with Climate Change

Adaptation and Mitigation are the two strategies when it comes to dealing with climate change. Either, we can find ways to live in our warming world (adaptation to climate change) or we can try to stop future warming (mitigation of climate change).

14.3.1. Climate Change Adaptation

Climate Change Adaptation involves developing ways to protect people and places by reducing their vulnerability to climate impacts. The Soil Health Card Scheme, *Paramparigat Krishi Vikas Yojana* launched to promote organic farming practices, *PM Krishi Sinchayi Yojana* launched to promote efficient irrigation practices could be adaptation strategies. To protect against sea level rise and increased flooding, communities might build seawalls or relocate buildings to higher ground, fish and crab culture in Mangrove areas, etc. are also adaptation strategies.

14.3.2. Climate Change Mitigation

Climate Change Mitigation involves attempts to slow the process of global climate change, usually by lowering the level of greenhouse gases in the atmosphere. Planting trees that absorb CO₂ from the air and store it is an example of one such strategy. In South Goa, replanting of senile plantations to

increase canopy cover, afforestation of mining affected areas, etc., could be some of the climate change mitigation measures. Other mitigation strategies could include promotion of renewable sources of energy and Green Highways Policy to develop a tree line along both sides of National / State Highways. The Smart City Mission, Atal Mission for Rejuvenation and Urban Transformation (AMRUT), Swachh Bharat Mission are some other initiatives which will help mitigate the climate change induced stresses.

14.4. Funding support for addressing the challenges faced by climate change

14.4.1 National Adaptation Fund on Climate Change (NAFCC)

NAFCC has been set up with an initial corpus of ₹ 350 crore and plans to cover one adaptation project per state / UT in its first phase. The projects under NAFCC prioritizes the needs that builds climate resilience in the areas identified under SAPCC / relevant Missions under NAPCC. *The State of Goa is yet to submit its project for consideration under NAFCC.*

14.4.2 Green Climate Fund (GCF)

This fund aims to promote a paradigm shift towards low emission and climate-resilient development pathways by providing support to developing countries to limit or reduce their Greenhouse Gas Emissions and to adapt to the impact of climate change. The board of GCF is headquartered in Seoul, South Korea and till date only one project from India (in Orissa State) has been considered for sanction.

14.4.3 Climate Change Fund

This fund with a corpus of ₹ 5 crore has been set by NABARD during 2016-17. Under this fund, grant assistance is provided to State Govt. / its entities to promote and support activities in the areas of Climate Change. The eligible activities include awareness creation, information dissemination, exposure visits, preparation of Project Concept Note / DPRs and training & capacity building of stakeholders.

14.5. Critical interventions required & action points to be addressed

A detailed environmental appraisal needs to be done to map the assimilative capacity of the environment of the district. Of Goas 190 Gram Panchayats, 111 have formed the Biodiversity Management Committees (BMCs) which record the wisdom, expertise and knowledge passed down through the ages, while also making an inventory of flora and fauna of the village – a document called the Peoples Biodiversity Register (PBR).

Some adaptation / mitigation strategies which can be implemented in South Goa are:

- (i) Afforestation on wasteland or Promotion of plantation / fruit crops
- (ii) Use of solar energy will reduce the coal/fossil fuel consumption, thus would help in mitigation.
- (iii) Use of micro irrigation in place of flood irrigation (as rise in temperature will lead to more evaporation and quantity of water is limited so micro irrigation technique like DRIP sets and sprinkler would be more useful)
- (iv) Construction of covered rain water harvesting structures for drinking water (animals and humans)
- (v) Construction of farm ponds for ground water recharge
- (vi) Weather advisory services
- (vii) Construction of ground water recharge structures
- (viii) Recycling of water used for washing or cooking
- (ix) Diversification of cropping pattern as per rising temperature so that income of farmers is not adversely affected.
- (x) Construction of improved cattle-shed which minimizes the impact of climate change

(xi) Promotion of integrated farming system

Climate change could bring about changes in the temperature and humidity that could affect flowering, fruit setting of plantation crops and result in outbreak of pest / disease leading to economic losses. There is an urgent need to study the effect of variations / fluctuations in climate patterns on crop productivity and arrive at suitable solutions like change in variety.

In South Goa, several coastal stretches have been suffering erosion damage. Flood protection measures need to be taken up as a preventive measure in these areas. A comprehensive assessment of rising sea levels, changing tidal patterns need to be undertaken. The high tide lines need to be redrawn in consultation with the Goa Coastal Zone Management Authority (GCZMA). Maintenance of bunds need to be taken up much more seriously as the seawater ingress will have a detrimental effect on Khazan land agriculture and other uses.

The CRZ norms have to be implemented very strictly along the coastline and there has to be a strong and effective legislation to ensure that the agricultural land in the state is not converted and used for construction of houses / buildings.

Chapter 15: Water Conservation - Per Drop More Crop

15.1. Introduction

India, with 2.4% of the world's total geographical area and 18% of the world's population, has only 4% of the world's total fresh water resources. With about 4000 billion cubic meter (bcm) of annual rainfall, the estimated utilizable water resources is only 1123 bcm (28%). Of the utilizable resource, 690 bcm is from surface water sources and the remaining is from replenishable groundwater sources. The cumulative water utilization by all sectors of the economy is 702 bcm (2010) of which, agriculture sector alone consumes 78% of the total water utilization. This is despite the fact that more than 55% of agriculture in India is rainfed. However, due to its wide temporal and spatial variability coupled with inadequate storage infrastructure, there are floods in some parts while severe drought conditions in other parts of the country.

15.2. Irrigation Potential

The irrigation potential of the country is estimated to be 139.90 million hectare (64.05 m. ha from groundwater and 75.85 m. ha from surface water). As against this, irrigation potential for 113.24 million hectares has been created up to end of XI Five Year Plan i.e. up to March 2012 of which, 89.94 m. ha has been utilized.

15.3. Ground Water Scenario

As per assessment of dynamic ground water resources, out of 6607 assessment units, 1071 units in various parts of the country have been categorized as 'over-exploited', 217 units as 'critical' and 697 units as semi-critical. Apart from this, there are 92 units completely underlain by saline ground water.

15.4. Policy Initiatives of Govt. of India

With a view to addressing the water scarcity situations and ensuring more equitable use of water, the Govt. of India launched *PM Krishi Sinchayi Yojana (PMKSY)* envisaging the concept of "*water for every farm*" and "*per drop more crop*" to which, NABARD is a key stakeholder. Under this initiative, it is targeted to enhance irrigation efficiency by about 20% and creating 28.5 million ha additional area under irrigation. The total budget allocated for implementing various components under PMKSY is ₹ 50,000 crore over a four year period (2015-16 to 2019-20). The major components include fast tracking completion of 99 incomplete major and medium irrigation projects, greater use of micro irrigation systems, ensuring water in every farm and improving soil & water management practices on watershed approach for enhancing livelihood security.

15.5. National Water Mission

Under the National Action Plan for Climate Change (NAPCC), the National Water Mission with the core objective of "*conservation of water, minimizing wastages and ensuring its more equitable distribution both across and within states through integrated water resources development and management*" has been envisaged. The Mission outlines the following five goals:

- 1) Comprehensive water data base in public domain and assessment of impact of climate change on water resources
- 2) Promotion of citizen and state action for water conservation, augmentation and preservation.
- 3) Focused attention to vulnerable areas including overexploited areas.
- 4) Increasing water use efficiency by 20%.
- 5) Promotion of basin level integrated water resources management.

15.6. NABARD' Initiatives in Water Resources Sector

15.6.1. Credit Planning for Irrigation Development

Institutional credit under private sector flows for the development of minor irrigation facilities through groundwater resources, including micro irrigation systems and solar pump sets.

15.6.2. Refinancing to Rural Financial Institutions

NABARD provides refinance support to all banks for financing MI structures like wells, community tube wells, energy efficient pump sets including solar-based pump sets, pipelines, water courses, lift irrigation schemes, micro irrigation structure, check dams, etc.

15.6.3. Watershed development

NABARD has been implementing watershed development projects since 1992 with an aim to improve agricultural development by capturing scarce water resources and managing the soil and vegetation both in rain-fed and semi-arid regions. The watershed interventions help in sustainably reducing farmers' distress in rain-fed areas, stabilise crop yields and improve the farmers' income.

15.6.4. Financing to State Govt. for creation of Irrigation Infrastructure

Under Rural Infrastructure Development Fund (RIDF), as on 31 March 2017, about 29.10 m.ha irrigation potential has been created through implementation of around 3 lakh irrigation projects. Over 50% of total financial support for irrigation sector, has been provided toward minor irrigation projects.

15.6.5. Long Term Irrigation Fund (LTIF)

Gol during 2016-17 set up Long Term Irrigation Fund (LTIF) in NABARD with an initial corpus of ₹ 20000 crore for fast tracking of incomplete major and medium irrigation projects. A total fund requirement of ₹ 77595 crore has been assessed to finance 99 identified incomplete projects over a period 2016-20. On completion, these projects will create additional irrigation potential of around 76.03 lakh hectare which will significantly contribute towards enhancing agricultural productivity. During 2016-17, a total of 85 projects were sanctioned under LTIF with aggregate loan amount of ₹ 49889 crore. Out of this, a loan amount of ₹ 9086 crore has been disbursed.

15.6.6. Micro Irrigation Fund

In order to achieve the national objective of enhancing water use efficiency in agriculture sector and bringing about desired growth, Gol has set up a dedicated fund in NABARD titled "Micro Irrigation Fund (MIF)" with an initial corpus of ₹ 5000 crore to be utilized from the year 2017-18 onwards. The main objective of the fund is 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 operationalization, would be used for providing loans at reasonable rate to the State Govt.

15.6.7. Water Conservation Campaign

NABARD launched a major Water Conservation Campaign to cover around 1,00,000 villages in most vulnerable / water stressed areas, particularly where the ground water is over exploited. Under this, around 200 Master Trainers and 8000 Krishi Jaldoots were deployed to run the campaign at village level covering different stakeholders including SHG members, Farmer clubs, women, health workers, etc. to sensitize them on water related aspects.

15.7. Critical Issues and Challenges in Irrigation Sector**15.7.1. Irrigation/ Water Use Efficiency**

The overall irrigation efficiency in the country is reported to be around 38%. The overall efficiency of surface water irrigation projects is around 35%-40% though there is potential to increase up to 55-

60%. Some of the reasons for poor efficiencies are partial completion of irrigation structures, poor operation and management, unlined canals, absence of volumetric water supply, silting of reservoirs, lack of community participation in planning and management, inadequate use of irrigation efficient practices, lack of capacity building of water users for efficient management of structures, etc.

15.7.2. Gap in Potential Created and Utilized

There is large gap between the potential created and utilized due to several factors. The main reasons for the gap are lack of proper operation and maintenance, incomplete distribution system, non-completion of on-farm activities, changes in cropping pattern and diversion of irrigated land to other purposes.

15.7.3. Declining Water Table

Public investments in irrigation has been largely focused on surface water irrigation making groundwater a common pool resource for utilization by private players, including farmers. This coupled with reducing rainfall-recharge and deforestation has led to faster decline in water table in many parts of the country.

15.7.4. Energy Demand for Irrigation (Water Energy Nexus)

With limited land resources, inadequate energy supply and growing water stress, India faces the challenge of providing enough water and energy to grow enough food for the burgeoning population. Promoting energy efficient water pumping devices, replacing low energy efficient pumps with high efficiency pumping system, greater use of solar pumping systems particularly in off-grid areas and optimizing agricultural water demand through appropriate crop planning, efficient use of water, ground water recharging and rainwater harvesting, etc. are some of the measures which need to be adopted by way of policy interventions.

15.7.5 Deteriorating Water Quality

The water sources are contaminated mainly by sewage and agricultural runoff. Management of water quality both, surface and groundwater are important in the context of meeting the emerging water demand for economic development & providing safe and affordable drinking water.

15.7.6. Recycling / Reuse of Waste Water

Untreated wastewater from domestic, hospital and industrial areas pollute rivers and other natural water bodies. The wastewater needs to be reused / recycled for various purposes.

15.7.7. Climate Change Impact on Water Resources

The impact of climate change will essentially be reflected in terms of water availability, changes in agricultural water demand, hydrologic extremes of floods & droughts, changes in water quality, salinity ingress in coastal aquifers, modifications in groundwater recharge and other related phenomena. NABARD as NIE for Adaptation Fund and Green Climate Fund, has been making efforts for accessing climate finance to address adverse impacts of climate change through adaptation actions as also climate proofing of the existing investments in various sectors of economy including the water sector.

Annexure I: Activity-wise / Block-wise Physical and Financial Projections for 2018-19

District: South Goa

Activity	Unit size	UC	Dharbandoda		Sanguem		Salcete		Quepem		Canacona		Mormugao		Ponda		Dist. Total	
			PU	BL	PU	BL	PU	BL	PU	BL	PU	BL	PU	BL	PU	BL	PU	BL
Agriculture																		
Farm Credit - Crop Loans																		
Crop Production, Maintenance & Marketing																		
Paddy (HYV Kharif)	Ha	0.66	1200	792.00	1500	990.00	3500	2310.00	3000	1980.00	2800	1848.00	500	330.00	2400	1584.00	14900	9834.00
Pulses	Ha	0.40	30	12.00	30	12.00	200	80.00	20	8.00	50	20.00	150	60.00	50	20.00	530	212.00
Sugarcane	Ha	1.58	150	237.00	200	316.00	50	79.00	100	158.00	100	158.00	0	0.00	30	47.40	630	995.40
Vegetables (K / Rabi)	Ha	0.92	200	184.00	200	184.00	300	276.00	300	276.00	450	414.00	100	92.00	250	230.00	1800	1656.00
P&H Crop Maintenance	Ha	1.50	500	750.00	500	750.00	310	465.00	400	600.00	400	600.00	200	300.00	500	750.00	2811	4217.00
Total			2080	1975.00	2430	2252.00	4361	3210.00	3820	3022.00	3800	3040.00	950	782.00	3230	2631.40	20670	16912
PH / Household / Consumption @10%				197.50		225.20		321.00		302.20		304.00		78.20		263.14		1691
Repairs and maint. of farm assets @20%				395.00		450.40		642.00		604.40		608.00		156.40		526.28		3383
Sub Total				2567.50		2927.60		4173.00		3928.60		3952.00		1016.60		3420.82	20670	21986
Farm Credit - Term Loan																		
Water Resources																		
Dug wells (dia 3m, depth 8-10m)	No.	1.76	100	132.00	100	132.00	100	132.00	100	132.00	100	132.00	60	79.20	100	132.00	660	871
Pumpsets - 5HP, 3 phase submersible	No.	0.30	100	22.50	100	22.50	100	22.50	100	22.50	100	22.50	50	11.25	100	22.50	650	146
Drip irrig. (Coconut)	No.	0.40	100	30.00	150	45.00	150	45.00	150	45.00	100	30.00	20	6.00	100	30.00	770	231
Drip irrig. (Banana)	No.	1.00	20	15.00	20	15.00	10	7.50	20	15.00	20	15.00	5	3.75	20	15.00	115	86
Sprinkler (Areca nut)	No.	0.50	50	18.75	50	18.75	10	3.75	50	18.75	30	11.25	10	3.75	50	18.75	250	94

Activity	Unit size	UC	Dharbandoda		Sanguem		Salcete		Quepem		Canacona		Mormugao		Ponda		Dist. Total	
Small LIS (pumps, pipes)	No.	1.40	20	21.00	80	84.00	75	78.75	50	52.50	50	52.50	0	0.00	50	52.50	325	341
Well deepening	No.	0.53	55	21.86	75	29.81	75	29.81	80	31.80	90	35.78	75	29.81	60	23.85	510	203
Misc. works				50.00		50.00		50.00		50.00		50.00		25.00		30.00	0	305
Sub Total				311.11		397.06		369.31		367.55		349.03		158.76		324.60	3280	2277
Farm Mechanisation																		
Tractor 35 HP	No.	7.40	15	83.25	15	83.25	15	83.25	15	83.25	15	83.25	10	55.50	15	83.25	100	555
Power Tillers 8 HP	No.	1.67	50	62.63	50	62.63	50	62.63	80	100.20	75	93.94	30	37.58	80	100.20	415	520
Rice Transpla. self-propelled	No.	12.10	1	9.08	1	9.08	1	9.08	1	9.08	1	9.08	1	9.08	1	9.08	7	64
Manual Rice Transplanters	No.	2.75	5	10.31	5	10.31	5	10.31	5	10.31	5	10.31	2	4.13	5	10.31	32	66
Combine Harvesters	No.	25.85	1	19.39	1	19.39	1	19.39	1	19.39	1	19.39	1	19.39	1	19.39	7	136
Sprayers	No.	0.06	100	4.50	100	4.50	100	4.50	100	4.50	100	4.50	50	2.25	100	4.50	650	29
Weeders	No.	0.44	100	33.00	100	33.00	80	26.40	100	33.00	100	33.00	50	16.50	100	33.00	630	208
Threshers	No.	0.41	25	7.69	25	7.69	25	7.69	25	7.69	25	7.69	10	3.08	25	7.69	160	49
Other Impl.	No.	0.97	600	436.50	600	436.50	750	545.63	600	436.50	600	436.50	250	181.88	600	436.50	4000	2910
Sub Total				666.34		666.34		768.86		703.91		697.65		329.36		703.91	6001	4536
Plantation & Horticulture																		
Cashew New	Ha	1.35	200	202.50	200	202.50	150	151.88	200	202.50	200	202.50	25	25.31	100	101.25	1075	1088
Cashew Rejuvenation	Ha	0.34	250	63.75	250	63.75	100	25.50	200	51.00	250	63.75	25	6.38	150	38.25	1225	312
Coconut New	Ha	1.88	75	105.75	100	141.00	100	141.00	100	141.00	100	141.00	20	28.20	100	141.00	595	839
Coconut Hybrid	Ha	2.45	20	36.75	20	36.75	10	18.38	30	55.13	30	55.13	5	9.19	30	55.13	145	266
Mango	Ha	1.72	50	64.50	50	64.50	50	64.50	50	64.50	50	64.50	5	6.45	50	64.50	305	393
Oil palm	Ha	1.10	30	24.75	50	41.25	0	0.00	30	24.75	10	8.25	0	0.00	30	24.75	150	124
Arecanut	Ha	2.97	20	44.55	20	44.55	10	22.28	20	44.55	20	44.55	0	0.00	20	44.55	110	245
Spices	Ha	1.16	15	13.05	20	17.40	5	4.35	10	8.70	15	13.05	2	1.74	50	43.50	117	102
Spices Nutmeg (mono crop)	Ha	0.92	20	13.80	20	13.80	10	6.90	10	6.90	10	6.90	0	0.00	10	6.90	80	55
Vegetables (exotic)	Ha	11.83	5	44.36	5	44.36	5	44.36	5	44.36	5	44.36	1	8.87	5	44.36	31	275

Activity	Unit size	UC	Dharbandoda		Sanguem		Salcete		Quepem		Canacona		Mormugao		Ponda		Dist. Total	
Vegetables (shade net)	Ha	3.99	5	14.96	5	14.96	5	14.96	5	14.96	5	14.96	2	5.99	5	14.96	32	96
Floriculture (Polyhouse)	Ha	8.94	5	33.53	5	33.53	2	13.41	5	33.53	5	33.53	1	6.71	5	33.53	28	188
Others	Ha	3.08	20	46.20	20	46.20	20	46.20	20	46.20	20	46.20	10	23.10	20	46.20	130	300
Nursery 2000 sqm	Ha	3.47	5	13.01	5	13.01	5	13.01	5	13.01	5	13.01	1	2.60	5	13.01	31	81
Oyster Mushroom	No.	2.31	2	3.47	2	3.47	2	3.47	2	3.47	2	3.47	2	3.47	2	3.47	14	24
Homestead farming	No.	0.46	40	13.80	40	13.80	50	17.25	40	13.80	40	13.80	30	10.35	40	13.80	280	97
Sub Total				738.73		794.83		587.44		768.35		768.95		138.35		689.15	4348	4486
Forestry and Waste Land Development																		
Teak	Ha	0.70	20	10.50	20	10.50	5	2.63	15	7.88	15	7.88	7	3.68	10	5.25	92	48
Bamboo	Ha	0.80	15	9.00	15	9.00	5	3.00	10	6.00	15	9.00	5	3.00	10	6.00	75	45
Sub Total				19.50		19.50		5.63		13.88		16.88		6.68		11.25	167	93
AH- Dairy																		
CB Cows (2 animal unit)	No.	1.62	120	145.80	150	182.25	150	182.25	150	182.25	150	182.25	100	121.50	150	182.25	970	1179
Graded Buffaloes (2 animal unit)	No.	1.62	20	24.30	20	24.30	20	24.30	20	24.30	20	24.30	15	18.23	20	24.30	135	164
Calf rearing (5 animal unit)	No.	3.04	30	68.40	30	68.40	30	68.40	30	68.40	30	68.40	10	22.80	30	68.40	190	433
Mini Dairy (10 animal unit)	No.	8.09	5	30.34	5	30.34	5	30.34	5	30.34	5	30.34	5	30.34	5	30.34	35	212
Community Dairy (100 animals)	No.	110	2	165.00	2	165.00	2	165.00	2	165.00	2	165.00	2	165.00	2	165.00	14	1155
Misc.	No.	0.28	20	4.20	20	4.20	20	4.20	20	4.20	20	4.20	20	4.20	20	4.20	140	29
Sub Total				438.04		474.49		474.49		474.49		474.49		362.06		474.49	1484	3173
AH- Poultry																		
Layers 2000 birds	No.	8.80	2	13.20	2	13.20	2	13.20	2	13.20	2	13.20	2	13.20	2	13.20	14	92
Broilers 1000 birds	No.	2.46	5	9.23	5	9.23	5	9.23	5	9.23	5	9.23	5	9.23	4	7.38	34	63
Rural BY Poultry 100 birds	No.	0.26	30	5.85	30	5.85	30	5.85	30	5.85	30	5.85	30	5.85	30	5.85	210	41

Activity	Unit size	UC	Dharbandoda		Sanguem		Salcete		Quepem		Canacona		Mormugao		Ponda		Dist. Total	
Open Cage Transport Veh.	No.	8.80	1	6.60	1	6.60	1	6.60	1	6.60	1	6.60	1	6.60	1	6.60	7	46
Egg / Broiler Cart	No.	0.11	2	0.17	2	0.17	2	0.17	2	0.17	2	0.17	2	0.17	2	0.17	14	1
Misc.	No.	26.40	1	19.80	0	0.00	1	19.80		0.00	0	0.00		0.00	1	19.80	3	59
Sub Total				54.84		35.04		54.84		35.04		35.04		35.04		53.00	282	303
AH - Sheep/Goat/Piggery																		
Pig rearing	No.	3.47	2	5.21	2	5.21	30	78.08	20	52.05	2	5.21	10	26.03	2	5.21	68	177
Goat Rearing	No.	1.74	5	6.53	10	13.05	10	13.05	10	13.05	5	6.53	5	6.53	10	13.05	55	72
Misc.	No.			5.00		5.00		5.00		5.00		5.00		2.00		0.00	0	27
Sub Total				16.73		23.26		96.13		70.10		16.73		34.55		18.26	123	276
Fisheries																		
Trawler replacement	No.	57.75	0	0.00	0	0.00	5	216.56	0	0.00	5	216.56	20	866.25	0.00	0.00	30	1299
Mechanization of canoes - OBM	No.	1.65	0	0.00	0	0.00	20	24.75	0	0.00	20	24.75	30	37.13	2.00	2.48	72	89
Fibre Boats	No.	2.31	0	0.00	0	0.00	10	17.33	0	0.00	20	34.65	30	51.98	0.00	0.00	60	104
Repair & maint. of vessels	No.			0.00		0.00		25.00				25.00		100.00		0.65	0	151
GPS, fish finder, search beacon	No.	1.54	0	0.00	0	0.00	100	115.50	20	23.10	100	115.50	100	115.50	0.00	0.00	320	370
Misc.	No.		0	5.00	0	5.00		25.00		25.00		25.00		40.00		25.00	0	150
Fresh water fish culture/ha	Ha	5.83	1	4.37	1	4.37	2	8.75	2	8.75	2	8.75	0	0.00	2	8.75	10	44
Ornamental fish rearing	No.	3.30	1	2.48	1	2.48	1	2.48	1	2.48	1	2.48	1	2.48	1	2.48	7	17
Mussel culture	No.	0.44	0	0.00	0	0.00	2	0.66	0	0.00	0	0.00	1	0.33	0	0.00	3	1
Mud crab culture	No.	8.25	0	0.00	0	0.00	2	12.38	1	6.19	0	0.00	0	0.00	0	0.00	3	19
Brackish water prawn culture	No.	12.32	0	0.00	0	0.00	1	9.24	1	9.24	0	0.00	0	0.00	0	0.00	2	18
Sub Total				11.85		11.85		457.63		74.75		452.68		1213.66		39.35	507	2262
Others - Agri and allied activities																		
Draught animals	No.	0.75	4	2.25	4	2.25	3	1.69	4	2.25	4	2.25	1	1.69	4	2.25	24	15
Bullock carts	No.	0.24	1	0.18	1	0.18	1	0.18	1	0.18	1	0.18	0	0.00	1	0.18	6	1
Farm vehicles	No.	6.68	15	75.15	15	75.15	20	100.20	20	100.20	10	50.10	10	50.10	20	100.20	110	551
Agri. - others	No.			800.00		1000.00		1000.00		1000.00		1000.00		1000.00		1000.00	0	6800
Sub Total				877.58		1077.58		1102.07		1102.07		1052.53		1051.79		1102.63	140	7367

Activity	Unit size	UC	Dharbandoda		Sanguem		Salcete		Quepem		Canacona		Mormugao		Ponda		Dist. Total	
Total Farm credit				5702.21		6427.54		8089.39		7539.30		7815.97		4346.84		6837.45	37002	46759
Agri Infrastructure - Storage Facilities																		
Cold storages	No.	63.00	0	0.00	1	47.25	1	47.25	0	0.00	0	0.00	0	0.00	1	47.25	3	142
Market yards	No.	231.00	1	173.25	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	1	173
Godowns (100 MT)	No.	3.68	1	2.76	1	2.76	1	2.76	1	2.76	1	2.76	1	2.76	1	2.76	7	19
Small milk chilling	No.	5.51	1	4.13	1	4.13	1	4.13	1	4.13	1	4.13	1	4.13	1	4.13	7	29
Sub Total				180.14		54.14		54.14		6.89		6.89		6.89		54.14	18	363
Agri Infrastructure - Land Development, Soil Conservation & Watershed Development																		
Land levelling and OFD	Ha	0.83	200	124.50	200	124.50	200	124.50	200	124.50	200	124.50	100	62.25	800	498.00	1900	1183
Reclamation	Ha	0.28	40	8.40	30	6.30	200	42.00	100	21.00	100	21.00	50	10.50	60	12.60	580	122
Water storage	No.	0.68	20	10.20	20	10.20	20	10.20	20	10.20	20	10.20	20	10.20	20	10.20	140	71
Sub Total				143.10		141.00		176.70		155.70		155.70		82.95		520.80	2620	1376
Agri Infrastructure - Others																		
Composting - Vermi (150 TPA)	No.	3.30	2	4.95	2	4.95	2	4.95	2	4.95	1	2.48	1	2.48	2	4.95	12	30
Composting - NADEP (40 TPA)	No.	1.12	1	0.84	1	0.84	1	0.84	1	0.84	1	0.84	1	0.84	1	0.84	7	6
Biofert. - 50 TPA	No.	44.00		0.00		0.00		0.00		0.00		0.00			1	33.00	1	33
Misc. (Fencing, Bund Repairing)	No.			25.00		25.00		20.00		20.00		25.00		10.00		25.00	0	150
Sub Total				30.79		30.79		25.79		25.79		28.32		13.32		63.79	20	219
Total Agri Infrastructure				354.03		225.93		256.63		188.38		190.91		103.16		638.73	2658	1958
Agri -Ancillary activities																		
Food and Agro Processing																		
Rice Mill 4800 MT/annum	No.	79.80		0.00	1	59.85		0.00		0.00		0.00		0.00	1	59.85	2	120
Poha/Murmura - 450 TPA	No.	6.53	0	0.00	1	4.90	0	0.00	0	0.00	0	0.00	0	0.00	1	4.90	2	10
Flour Mill - 280 TPA	No.	3.15	2	4.73	2	2.00	2	4.73	2	4.73	2	4.73	2	4.73	2	4.73	14	30

Activity	Unit size	UC	Dharbandoda		Sanguem		Salcete		Quepem		Canacona		Mormugao		Ponda		Dist. Total	
Bakery Units - 80 TPA	No.	7.98	1	5.99	1	5.99	2	11.97	1	5.99	1	5.99	2	11.97	2	11.97	10	60
Coconut oil mill 90 MT / annum	No.	20.48	1	15.36	1	15.36	1	15.36	1	15.36	1	15.36	0	0.00	1	15.36	6	92
Mango / other fruit Proc. 300 MT / annum	No.	78.75	0	0.00	1	59.06	1	59.06	0	0.00	0	0.00	1	59.06	1	59.06	4	236
Kokum Proc. 72 TPA	No.	4.20	1	3.15	1	3.15	0	0.00	0	0.00	0	0.00	0	0.00	1	3.15	3	9
Cashew Proc. 50 TPA	No.	7.46	1	5.60	1	5.60	1	5.60	1	5.60	2	11.19	1	5.60	1	5.60	8	45
Cashew Proc. 500 MTPA	No.	168.00	0	0.00	1	126.00	0	0.00	0	0.00	0	0.00	0	0.00	1	126.00	2	252
Fish / Meat Proc. 200 TPA	No.	84.00	0	0.00	0	0.00	2	126.00	0	0.00	1	63.00	3	189.00	0	0.00	6	378
Sub Total			6	34.82	10	281.90	9	222.71	5	31.67	7	100.26	9	270.35	11	290.61	57	1232
Ancillary - Others																		
Loans to Coop Societies			0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	1	600.00	1	600
Loans to PACS			1	20.00	1	25.00	1	25.00	1	50.00	1	20.00	1	20.00	2	50.00	8	210
ACABCs	7.00	10.00	1	7.50	1	7.50	1	7.50	1	7.50	1	7.50	1	7.50	1	7.50	7	53
Sub Total				27.50		32.50		32.50		57.50		27.50		27.50		657.50	16	863
Total Agri Ancillary				62.32		314.40		255.21		89.17		127.76		297.85		948.11	73	2095
Total Agri				5973.79		7120.47		8411.52		7634.69		8218.99		4363.56		8898.64	39144	50812
MSME - Manufacturing Sector Term loan																		
Micro	No.	10.00	75	562.50	75	562.50	200	1500.00	100	750.00	75	562.50	300	2250.00	200	1500.00	1025	7688
Small	No.	150.00	20	2250.00	20	2250.00	40	4500.00	20	2250.00	20	2250.00	75	8437.50	40	4500.00	235	26438
Medium	No.	600.00	10	4500.00	10	4500.00	30	13500.00	15	6750.00	10	4500.00	40	18000.00	50	22500.00	165	74250
Sub Total			105	7312.50	105	7312.50	270	19500.00	135	9750.00	105	7312.50	415	28687.50	290	28500.00	1425	108375
MSME (M) WC	No.			3656.25		3656.25		9750.00		4875.00		3656.25		14343.75		14250.00	0	54188
MSME - Service Sector Term loan																		
MSME (S) Micro	No.	5.00	60	225.00	60	225.00	150	562.50	100	375.00	50	187.50	100	375.00	100	375.00	620	2325
MSME (S) Small	No.	50.00	20	750.00	20	750.00	30	1125.00	20	750.00	20	750.00	30	1125.00	20	750.00	160	6000
Sub Total			80	975.00	80	975.00	180	1687.50	120	1125.00	70	937.50	130	1500.00	120	1125.00	780	8325

Activity	Unit size	UC	Dharbandoda		Sanguem		Salcete		Quepem		Canacona		Mormugao		Ponda		Dist. Total	
MSME (S) WC	No.		0	292.50		292.50		506.25		337.50		281.25		450.00		337.50	0	2498
Total			185	12236.25		12236.25		31443.75		16087.50		12187.50		44981.25		44212.50	2205	173385
Export credit	No.	200.00		0.00	5	1000.00	40	8000.00	20	4000.00	20	4000.00	50	10000.00	40	8000.00	175	35000
Education																		
Education loans	No.	10.00	100	750.00	200	1500.00	300	2250.00	200	1500.00	100	750.00	500	3750.00	200	1500.00	1600	12000
Housing																		
New HL		20.00	500	7500.00	500	7500.00	1000	18000.00	500	7500.00	600	9000.00	1000	15000.00	1000	15000.00	5100	79500
HL - Repairs	No.	2.00	300	450.00	300	450.00	600	900.00	300	450.00	300	450.00	500	750.00	500	750.00	2800	4200
Sub Total			800	7950.00	800	7950.00	1600	18900.00	800	7950.00	900	9450.00	1500	15750.00	1500	15750.00	7900	83700
Renewable Sources of Energy and Waste Utilisation																		
Solar Water heaters (100 - 500 LPD)	No.	0.65	60	29.25	60	29.25	60	29.25	60	29.25	60	29.25	100	48.75	30	14.63	430	210
Solar street light systems	No.	0.27	30	6.08	30	6.08	30	6.08	30	6.08	30	6.08	50	10.13	50	10.13	250	51
Solar Home Lighting systems	No.	0.30	40	9.00	40	9.00	40	9.00	40	9.00	40	9.00	40	9.00	36	8.10	276	62
Solar irrig. Pumps 3 HP	No.	5.13	2	7.70	2	7.70	3	11.54	2	7.70	2	7.70	2	7.70	2	7.70	15	58
Biogas plant	No.	0.30	20	4.50	20	4.50	20	4.50	20	4.50	20	4.50	20	4.50	20	4.50	140	32
Biomass briquetting	No.	4.00	2	6.00	2	6.00	1	3.00	1	3.00	1	3.00	1	3.00	1	3.00	9	27
Sub Total				53.52		53.52		54.37		59.52		59.52		83.07		39.95	1120	439
Others																		
SHG loans	No.	1.50	150	225.00	200	300.00	300	450.00	250	375.00	250	375.00	300	450.00	300	450.00	1750	2625
JLG loans	No.	1.25	50	62.50	50	62.50	50	62.50	50	62.50	50	62.50	50	62.50	50	62.50	350	438
PMJDY loans	No.	0.05	100	5.00	100	3.75	100	5.00	100	5.00	100	5.00	100	5.00	100	5.00	700	34
Sub Total				292.50		366.25		517.50		442.50		442.50		517.50		517.50	2800	3096
Social Infrastructure																		
Toilet blocks in homes	No.	1.37	300	308.25	300	308.25	500	513.75	400	411.00	300	308.25	300	308.25	400	411.00	2500	2569
School toilet blocks / drinking water facility	No.	21.00	10	157.50	10	157.50	25	393.75	20	315.00	10	157.50	15	236.25	20	315.00	110	1733

Activity	Unit size	UC	Dharbandoda		Sanguem		Salcete		Quepem		Canacona		Mormugao		Ponda		Dist. Total	
Transport vehicles in health sector	No.	15.75	5	59.06	5	59.06	5	59.06	5	59.06	5	59.06	5	59.06	5	59.06	35	413
Paper and plastic waste recycling unit	No.	21.00	1	15.75	1	15.75	2	31.50	1	15.75	1	15.75	2	31.50	1	15.75	9	142
Composting / biogas units	No.	2.10	15	23.63	15	23.63	40	63.00	20	31.50	15	23.63	40	63.00	30	47.25	175	276
Sub Total				564.19		564.19		1061.06		832.31		564.19		698.06		848.06	2829	5132
Grand Total (Total Priority Sector)				27818.65		30788.59		70657.48		38501.87		35665.57		80148.62		79793.12		363564

**Annexure II: An Overview of Ground Level Credit Flow - Agency-wise and Sector-wise
2014-15, 2015-16, 2016-17 and target for 2017-18**

(₹ lakh)

Sl. No.	Activity	Agencies	2014-15		2015-16		2016-17		Target 2017-18
			Target	Achievement	Target	Achievement	Target	Achievement	
1	Crop Loan	CB	10907.60	1831.49	20413.23	18781.52	14306.85	11314.30	18394.86
		SCB	2783.20	441.96	3460.60	422.06	2264.97	4227.16	2782.92
		Others	163.00	747.39	323.63	79.03	246.36	79.03	322.97
	Sub-Total CL		13853.80	3020.84	24197.46	19282.61	16818.18	16121.00	21500.75
2	Term Loan (Agri & Allied) (MT+LT)	CB	16898.85	7475.61	25871.46	8975.16	18761.55	15472.74	22871.59
		SCB	4523.33	937.73	6174.1	2179.45	4258.81	1964.71	4823.07
		Others	258.32	774.00	567.72	938.84	470.33	589.55	676.40
	Sub-Total TL		21680.50	9187.34	32613.28	12093.45	23490.69	18027.00	28371.06
3	Total Agricultural Credit(1+2)	CB	27806.45	9307.1	46284.69	27756.68	33068.40	26787.04	41266.45
		SCB	7306.53	1379.69	9634.70	2601.51	6523.78	6191.87	7606.01
		Others	421.32	1521.39	891.35	1017.87	716.69	1169.09	999.35
	Sub-Total Agri.		35534.30	12208.18	56810.74	31376.06	40308.87	34148.00	49871.81
4	MSME	CB	13927.39	12638.30	24382.07	25626.93	115996.01	101826.88	147583.46
		SCB	1608.82	129.63	1893.23	377.07	9046.61	1515.76	10194.20
		Others	1404.86	403.43	2382.36	654.13	11434.78	2825.36	13749.22
	Total MSME		16941.07	13171.36	28657.66	26658.13	136477.40	106168.00	171526.88
5	Other Priority Sector	CB	82914.71	94850.26	136349.50	109745.11	94000.89	83629.15	106531.07
		SCB	8606.27	6746.31	18316.74	8440.65	12353.60	10153.12	12005.98
		Others	10734.85	22871.95	27538.70	21085.22	20712.43	13250.73	19192.24
	Total OPS		10255.83	124468.52	182204.94	139270.98	127066.92	107033.00	137729.29
6	Total	CB	124648.55	116795.66	207016.26	163128.72	243065.30	212243.07	295381.02
		SCB	17521.62	8255.63	29844.67	11419.23	27923.99	17860.75	29806.19
		Others	12561.03	24796.77	30702.41	22757.22	32863.90	17245.18	33940.76
Grand Total (3+4+5)			154731.20	149848.06	267673.34	197305.17	303853.19	247349.00	359127.98
No SCARDB and RRBs in Goa									

ANNEXURE III: Sub-sector-wise and Agency-wise Credit Flow under Agriculture and Allied Activities
2014-15, 2015-16 & 2016-17

(₹ lakh)

Sr. no.	Activity	2014-15				2015-16				2016-17			
		CBs	SCB	UCB	Total	CBs	SCB	UCB	Total	CBs	SCB	UCB	Total
A	Crop Loan	1831.49	441.96	747.39	3020.84	18781.52	422.06	79.03	19282.61	11314.30	4227.16	579.54	16121.00
B	Agri. Term loan												
1	Water Resources	152.23	27.83	0	180.06	123.93	63.22	0.92	188.07	15472.74	1964.71	589.55	18027.00
2	Land Development	751.14	42.93	0	794.07	2068.02	45.83		2113.85				
3	Farm Mechanisation	170.84	325.75	30.3	526.89	292.86	902.22	5.22	1200.3				
4	Plantation & Horticulture	430.62	301.99	234.48	967.09	221.72	793.70	310.71	1326.13				
5	Dairy Development	322.06	153.15	0	475.21	300.74	220.16		520.9				
6	Poultry	4	29.8	0	33.8	4.82	77.88		82.7				
7	Sheep/Goat/Piggery	0	3.41		3.41	28.45			28.45				
8	Fisheries	488.31	15.6	0	503.91	447.56	8.82		456.38				
9	Farm Forestry/WLD	83.76	0	0	83.76	42.58			42.58				
10	Storage/Market yard	103.5	0	0	103.5	86.54			86.54				
11	Renewable Energy	0	0	0	0				0				
12	Agri Others	4969.15	37.27	509.22	5515.64	5357.94	67.62	621.99	6047.55				
	Total (B)	7475.61	937.73	774	9187.34	8975.16	2179.45	938.84	12093.45	15472.74	1964.71	589.55	18027.00
	Grand Total (A+B)	9307.1	1379.69	1521.39	12208.18	27756.68	2601.51	1017.87	31376.06	26787.04	6191.87	1169.09	34148.00
	No SCARDB and RRB in Goa												

Sub sector-wise data not available during the year 2016-17

Annexure IV - Indicative Unit Costs (for major activities in the district) as arrived at by NABARD for its internal use

I. Minor Irrigation				
Sr. No.	Item of Investment	Specifications	Unit cost (₹)	Remarks
1	Open wells (new) Dug-well-cum-Bore wells in lateritic terrain Deepening of existing well	3-4 m dia and 8-10m depth of lining 3-5m	132000 to 180000 48,000	Yearly repayment. max. of 15 yrs. with gestation period of 23 months.
2	Pumpset –electric (3 phase, submersible) with accessories and installation charges	5 HP	25000	Yearly repayment. max. of 9 yrs. with gestation period of 11 months.
3	DRIP Irrigation (coconut) per ha (includes cost of mainline, lateral, drippers micro tubes, connectors, end plugs, screen fitters, control valves and other accessories)	8m x 8m crop spacing	32500	Yearly repayment. max. of 10-15 yrs. with gestation period of 11 months.
4	DRIP Irrigation (Banana) per ha	2m x 2m	91300	
5	Sprinkler Irrigation per ha (semi-permanent system)	75mm HDPE pipes	45750	
6	Small Lift irrigation	160mm dia pipes	127000	
II. Land Development				
1	Land levelling, OFD/ha and graded bunding	0.95 sqm c/s 210 m length per ha- 200 CuM	72450	For lands with 2-3% slope. (UC rounded to Rs.50000)
2	Water Management/ conservation /water storage ponds (25 m3 capacity)	5 m x 5m x 1m	58650	
3	Land Reclamation (minor work) /ha		25000	
4	Composting -NADEP -40 TPA		100000	@Rs.15000/6T/annum
5	Composting (vermicompost) -150 TPA		300000	@Rs.2000/T/annum
III. Farm mechanization				
1	Tractors - 35 HP		673000	Half Yearly repayment. -max. 5-7 years with 3 months grace.
2	Power tillers -8 HP		152000	
3	Rice transplanters – Japanese model		1100000	
4	Combine harvesters		2340000	
5	Agrl. implements - sprayers		5000	
6	Agrl. implements - Weeders		40000	
7	Agrl. implements – threshers		40000	
Sr. No.	Item of Investment	Specifications	Unit cost (₹)	Remarks
IV. Plantation and Horticulture				

1	Cashew /ha		116700	Repayment of 12-15 years with gestation of 6-7 years
2	Coconut /ha		163000	
3	Hybrid coconut / ha		212600	
4	Arecanut /ha		257000	
5	Mango (and other garden fruits)/ha		160000	
6	Oil palm /ha		100000	Repayment of 10-12 years with gestation of 4-
7	Spices- pepper (mixed crop with areca/coconut / ha		100000	
8	Spices – nutmeg /ha		80000	
9	Vegetable (poly house of 1000 sqm)		1075000	Polyhouse cost -Rs.935 per sqm and planting material cost –Rs. 105/sqm
10	Floriculture (poly house of 560 sqm - Gerbera)		813000	Polyhouse cost -Rs.935 per sqm and planting material cost –Rs. 500/sqm
11	Vegetable under shade net -1000 sqm		363000	
12	Nursery (PH planting matl. and ornamental) /acre		300000	
13	Oyster mushroom units –nos.(8000 kg per annum)		200000	
14	Homestead gardening 1000sqm		40000	
V. Forestry				
1	Teak /ha		64,000	
2	Bamboo /ha		72,000	
Animal Husbandry – Dairy Development				
1	CB Cows	2 animals	140000	Repayment monthly. Max. of 5-6 years with gestation of 6 months
2	Graded Buffaloes	2 animals	140000	
3	Calf rearing	Per animal	52000	
4	Mini dairy	10 animals	700000	
Animal Husbandry – Poultry Development				
1	Commercial Layers	2000 birds unit	800000	Repayment quarterly. Max. of 6-7 years with gestation of 6 months
2	Commercial Broilers	1000 birds unit	224000	
3	Rural back yard poultry	100 birds	24000	
4	Poultry feed mill/Hatchery		240000	
Sr. No.	Item of Investment	Specifications	Unit cost (₹)	Remarks
Animal Husbandry – Goat and Piggery Development				

1	Pig rearing with sty	4 sows +1 boar unit	300000	Repayment half yearly. Max. of 5-6 years with gestation of 1 year.
2	Goat Rearing (with shed)	18 does +2 buck unit	150000	
Fisheries				
1	Trawler replacement-wooden/ steel hull (along with engine and power block) -length not exceeding 60 feet.		5250000	
3	Mechanization of canoes - with Out Board Motors		150000	
4	Fiber Boats (motorized - length not exceeding 36 feet		210000	
5	Fresh water fish culture/ha –carp varieties		530000	
6	Ornamental fish rearing		300000	
7	Mussel culture		40000	
8	Crab culture		750000	
9	GPS/Fish finder		35000	
8	Brackish water culture		1120000	
Storage Godowns and Market yards				
1	Cold storages	1000 MT capacity	6000000	
2	Market Yards		22000,000	
3	Godowns	100 MT	350000	
4	Small milk chilling units	1000 litres	525000	
Renewable sources of energy -Biogas				
1	Biogas unit	2 cum	30000	
2	Biomass briquetting machine		400000	
3	Solar irrigation pumps	3 HP	513000	

Annexure-V: Scale of Finance for major crops fixed by District Level Technical Committee (DLTC) for 2017-18

Sr. No.	Name of the Crop	Cost of cultivation per Plant/Acre (₹)	Bank Loan per acre	Bank Loan per ha.	Due date for Repayment
1	2	3	4		10
1	Paddy Local	20000	20000	50000	15th Jan -- Kharif 30th June -- Rabi
2(a)	Paddy (H.Y.V- Kharif)	25000	25000	62500	15th Jan -- Kharif
2(b)	Paddy (H.Y.V- Rabi.)	28000	28000	70000	30th June -- Rabi
3(a)	Banana Local (Per Plant)	250	250	625	Maximum 18 months from the date of
3(b)	Banana Local (Per Acre 600 Plants)	150000	150000	375000	-do-
4(a)	Banana Local Ratoon (Per Plant)	200	200	500	-do-
4(b)	Banana Local Ratoon (Per Acre 600 Plants)	120000	120000	300000	-do-
5(a)	Banana Mandoli (Per Plant)	400	400	1000	-do-
5(b)	Banana Mandoli (Per Acre 600 Plants)	240000	240000	600000	-do-
6	Tissue culture Banana (Per Acre 600 Plants) Variety-Basarai Dwarf	103000	103000	257500	Maximum 18 Months from the date of disbursement
	Shreemati Grandenine and Local (TC)	108000	108000	270000	Maximum 18 Months from the date of
7	Papaya (Per Acre) (600 Plants)	50000	50000	125000	15 to 18 Months from the date of
8(a)	Pine Apple High breed variety giant (Per Acre	90000	90000	225000	31st May
9(a)	Vegetable (Kharif) (Per Acre) Local	30000	30000	75000	6 months from the date of disbursement
9(b)	Vegetable (Rabi) local (per acre)	35000	35000	87500	6 months from the date of disbursement
9©	Hybrid vegetables	40000	40000	100000	6 months from the date of disbursement
10(a)	Arecanut (Per plant)	400	400	1000	12 months from the date of disbursement
10(b)	Arecanut (Per Acre 600 plants)	240000	240000	600000	12 months from the date of disbursement
11(a)	Cashew (Per Plant)	275	275	687.5	15th June
11(b)	Cashew (Per Acre 80 plants)	22000	22000	55000	15th June
12(a)	Coconut (Per plant)	700	700	1750	12 months from the date of disbursement
12(b)	Coconut (Per Acre 60 plants)	42000	42000	105000	12 months from the date of disbursement
13	Groundnut (Rabi)	19000	19000	47500	30th June
14	Pulses (Per Acre)	15000	15000	37500	30th June
15(a)	Sugarcane (New Crop) (Per Acre)	60000	60000	150000	15th June / 30th June

15(b)	Sugarcane (Ratoon) (Per Acre)	48000	48000	120000	15th June / 30th June
16	Rubber Plantation (Per Acre)	11000	11000	27500	31st May
17	Oil Palm (Per Acre)	30000	30000	75000	31st May
18(a)	Mango (Per plant)	1500	1500	3750	31st July
18(b)	Mango (Per Acre 40 plants)	60000	60000	150000	31st July
19(a)	Floriculture New Crops Bulbous Crops (Per	112000	112000	280000	30th June
19(b)	Anthurium (Per Acre) Gerbera, Orchids etc.	112000	112000	280000	30th June
19(c)	Grafted varieties or Medium costs crops (per	45000	45000	112500	30th June
19(d)	Seed Varieties (per Acre) (Marigold, Aster,	40000	40000	100000	30th June
20	Vetivera)	29200	29200	73000	12 months from the date of disbursement
21	Fodder(new plantation)	37500	37500	93750	12 months from the date of disbursement
22	Fodder ratoon	25000	25000	62500	12 months from the date of disbursement
23	Spices nutmeg – new plantation	350	350	350	12 months from the date of disbursement
24	Spices bl. Pepper – new plantation	150	150	150	12 months from the date of disbursement
25	Ginger	80000	80000	200000	9-12 m from the date of disbursement
26	Turmeric	70000	70000	175000	9-12 m from the date of disbursement

Annexure VI: Block wise details of potential available for promotion and savings linkage of SHGs & JLGs

Sl. No.	Name of the Block	No. of SHGs savings linked on 31 March 2017	Balance potential as on 31 March 2017	No. of SHGs to be promoted and savings linked during 2017-18	No. of SHGs to be promoted and savings linked during 2018-19	No. of JLGs to be promoted and savings linked during 2017-18	No. of JLGs to be promoted and savings linked during 2018-19
1	Dharbandora	NA	20	10	10	20	20
2	Sanguem	NA	20	10	10	20	20
3	Mormugao	NA	30	15	15	30	30
4	Ponda	NA	30	15	15	50	50
5	Salcete	NA	20	10	10	30	30
6	Quepem	NA	20	10	10	30	30
7	Canacona	NA	20	10	10	50	50
	Dist. Total	3420	160	80	80	230	230

Annexure VI A**Block wise potential for credit linkage of SHGs and JLGs**

(₹ lakh)

Sl. No.	Name of the block	No. of SHGs (credit linked) as on 31.03.17	SHGs to be credit linked during 2017-18				JLGs. to be credit linked during 2017-18				SHGs to be credit linked during 2018-19				JLGs to be credit linked during 2018-19			
			Fresh		Repeat		Fresh		Repeat		Fresh		Repeat		Fresh		Repeat	
			No.	Amt.	No.	Amt.	No.	Amt.	No.	Amt.	No.	Amt.	No.	Amt.	No.	Amt.	No.	Amt.
1	Salcete	NA	10	15.00	15	22.50	20	25.00	35	43.75	10	15.00	15	22.50	20	25.00	35	43.75
2	Mormugao	NA	10	15.00	15	22.50	20	25.00	35	43.75	10	15.00	15	22.50	20	25.00	35	43.75
3	Quepem	NA	10	15.00	20	30.00	20	25.00	25	31.25	10	15.00	20	30.00	20	25.00	25	31.25
4	Sanguem	NA	10	15.00	20	30.00	20	25.00	25	31.25	10	15.00	20	30.00	20	25.00	25	31.25
5	Dharbandora	NA	10	15.00	20	30.00	20	25.00	20	25.00	10	15.00	20	30.00	20	25.00	20	25.00
6	Canacona	NA	10	15.00	10	15.00	20	25.00	25	31.25	10	15.00	10	15.00	20	25.00	25	31.25
7	Ponda	NA	10	15.00	25	37.50	20	25.00	35	43.75	10	15.00	25	37.50	20	25.00	35	43.75
	Dist. Total	1002	70	105.00	125	187.50	140	175.00	200	250.00	70	105.00	125	187.50	140	175.00	200	250.00

Average loan @ ₹ 1.50 lakh per SHG is considered; Average loan @ ₹1.25 lakh per JLG is considered

Abbreviations

ACABC	Agri Clinics and Agri Business Centres	MNRE	Ministry of New and Renewable Sources of Energy
ACP	Annual Credit Plan	MPT	Mormugao Port Trust
APMC	Agricultural Produce Marketing Committee	MSL	Mean Sea Levels
ASCI	Agriculture Skill Council of India	MSME	Micro, Small and Medium Enterprises
ATS	Apprenticeship Training Scheme	MUDRA	Micro Units Development & Refinance Agency
BMCs	Biodiversity Management Committees	NAFCC	National Adaptation Fund on Climate Change
CADA	Command Area Development Authority	NAPCC	National Action Plan on Climate Change
CBS	Core Banking System	NBFC	Non-Banking Financial Company
CC	Climate Change	NCDC	National Cooperative Development Corporation
CCARI	Central Coastal Agricultural Research Institute	NCOF	National Centre for Organic farming
CDF	Cooperative Development Fund	NCVT	National Council for Vocational Training
CGWB	Central Ground Water Board	NICRA	National Initiative on Climate Resilient Agriculture
CMRY	Chief Minister Rozgar Yojana	NIDA	NABARD Infrastructure Development Assistance
CRZ	Coastal Regulation Zone	NIE	National Implementing Entity
CTS	Craftsmen Training Scheme	NIO	National Institute of Oceanography
DAY	Deendayal Antyodaya Yojana	NPOF	
DBT	Direct Benefit Transfer	NRLM	National Rural Livelihoods Mission
DCC	District Consultative Committee	NSA	Net Sown Area
DCCB	District Central Cooperative Bank	NSDA	National Skill Development Agency
DGT	Directorate General of Training	NSDC	National Skill Development Corporation
DIC	District Industries Centre	NULM	National Urban Livelihood Mission
DITC	Directorate of Industries, Trade & Commerce	OFPO	Off Farm Producer Organization
DRDA	District Rural Development Agency	OFSPF	Off-Farm Sector Promotion Fund
DSTE	Department of Science Technology and Environment	P&H	Plantation & Horticulture
EDC	Economic Development Corporation	P&M	Plant & Machinery
eNAM	Electronic National Agricultural Market	PACS	Primary Agricultural Credit Society
FCI	Food Corporation of India	PBR	Peoples Biodiversity Register
FI	Financial Inclusion	PHCs	Primary Health Centres
FLC	Financial Literacy Centres	PKVY	Paramparigat Krishi Vikas Yojana
FPC	Farmer Producer Company	PLP	Potential Linked Credit Plan
FPF	Food Processing Fund	PMAY	Pradhan Mantri Awas Yojana
FPOs	Farmer Producer Organizations	PMEGP	Prime Minister' Employment Generation Programme
FSPF	Farm Sector Promotion Fund	PMFBY	Pradhan Mantri Fasal Bima Yojana
FSSAI	Food Safety & Standards Authority of India	PMJDY	Pradhan Mantri Jan Dhan Yojana
FYM	Farm Yard Manure	PMKSY	Pradhan Mantri Krishi Sinchayi Yojana
GCA	Gross Cropped Area	PMKVY	Pradhan Mantri Kaushal Vikas Yojana
GCCI	Goa Chamber of Commerce and Industry	PSL	Priority Sector Lending

GCF	Green Climate Fund	PWD	Public Works Department
GCZMA	Goa Coastal Zone Management Authority	RCS	Registrar of Cooperative Societies
GEDA	Goa Energy Development Agency	RDWS	Rural Drinking Water Supply Scheme
GFDC	Goa Forest Development Corporation	RIDF	Rural Infrastructure Development Fund
GHRSSDC	Goa Handicrafts Rural and Small Scale Industries Development Corporation	RKVY	Rashtriya Krishi Vikas Yojana
GI	Geographical Indication	RRBs	Regional Rural Banks
GSAMB	Goa State Agriculture Marketing Board	RSETI	Rural Self Employment Training Institute
GSHDCL	Goa State Horticulture Development Corporation Ltd.	RUDSETI	Rural Development and Self Employment Training Institute
GSIDC	Goa State Infrastructure Development Corporation	SAPCC	State Action Plan for Climate Change
GSRLM	Goa State Rural Livelihood Mission	SCARDBs	State Cooperative Agricultural & Rural Development Banks
HRDF	Human Resource Development Federation	SCB	State Cooperative Bank
ICAR	Indian Council for Agricultural Research	SCVT	State Council for Vocational Training
IGA	Income Generating Activities	SDI	Skill Development Initiative
IPCC	Intergovernmental Panel on Climate Change	SEZ	Special Economic Zone
IPM	Integrated Pest Management	SF	Small Farmer
ISS	Interest Subvention Scheme	SHGs	Self Help Groups
ITI	Industrial Training Institutes	SHPIs	Self Help Promoting Institutions
JLGs	Joint Liability Groups	SIP	Salaulim Irrigation Project
KCC	Kisan Credit Card	SLBC	State Level Bankers Committee
KVI	Khadi and Villages Industries	SLSCCC	State Level Steering Committee on Climate Change
KVIB	Khadi and Villages Industries Board	SLUCC	State Level Unit Cost Committee
KVIC	Khadi and Villages Industries Commission	SRI	System of Rice Intensification
KVKs	Krishi Vigyan Kendras	SSI	Sustainable Sugarcane Initiative
LBRs	Lead Bank Returns	SSSKL	Sanjivani Sahakari Sakhar Karkhana Ltd.
LBS	Lead Bank Scheme	STLs	Soil Testing Labs
LEDP	Livelihood Enterprise Development Programme	TFO	Total Financial Outlay
LTIF	Long Term Irrigation Fund	UAM	Udyog Aadhaar Memorandum
MEDP	Micro Enterprise Development Programme	UCBs	Urban Cooperative Bank
MF	Marginal Farmer	WGDP	Western Ghats Development Programme
MFI	Micro Finance Institutions	WIF	Warehousing Infrastructure Fund
MI	Minor Irrigation	WRD	Water Resources Department
MIDH	Mission for Integrated Development of Horticulture	WRs	Warehouse Receipts