

## 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 उत्तर 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 करनेसंबंधी 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। भू जोतों 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 उत्तर गोवा की योजना में प्राथमिकता क्षेत्र की विभिन्न गतिविधियों के लिए रु.3777.70 करोड़ की ऋण संभाव्यता का आकलन किया गया है। मुझे उम्मीद है कि इस पीएलपी से उन क्षेत्रों को 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।



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## FOREWORD

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

The State GDP for 2016-17 was ₹ 62,000 crore. The economy of Goa is quite robust, vibrant and unique, with major contribution from tourism, mining and industries. Goa has all the ingredients to emerge as a global destination a la European centres. 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 for 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 for North Goa for the year 2018-19 projects credit potential of ₹ 3777.70 crore, for various activities under priority sectors. I hope the PLP would help the banks/branches in extending credit to 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.



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17 October 2017

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## Executive Summary

One of the initiatives of NABARD is preparing district-wise Potential Linked Plans (PLPs). The theme for the PLP 2018-19 is “*Water Conservation – Per Drop More Crop*”. Keeping in view the national and state priorities, strategy for formulation of PLPs envisages estimation of long term potential in terms of physical units in each sector of agriculture and rural development.

In order to achieve the GoI initiative of Doubling of Farmers’ Income by 2022, State Government, NABARD, Banks, ICAR, NGOs and other stake holders may join hands together. The Government of Goa has announced various proposals and schemes in the budget 2017-18 and also provides attractive subsidy for agriculture and allied activities including animal husbandry, fisheries, plantation & horticulture which can be availed by eligible farmers, entrepreneurs.

The infrastructure support plays a critical role in improving the economy of the state. In this direction, construction of warehouses, cold chains, road network, branding of agricultural produce, encouraging organic farming, marketing and value addition to be given importance. Funds under Rural Infrastructure Development Fund (RIDF) / Warehousing Infrastructure Fund (WIF), NABARD Infrastructure Development Assistance (NIDA), Food Processing Fund (FPF) may be availed from NABARD to bridge the critical infrastructure gap.

Climate Change preparedness is one area in which the District is lagging behind. North Goa located along the bio diversity rich Western Ghats and Arabian Sea on eastern and western sides is likely to witness 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) is open for which appropriate projects need to be developed for the District.

Goa is known as one of the best tourist destinations across the world. The District HQs located at Panaji. North Goa District famous for beaches is spread across an area of 1463 sq. km. The district has 5 blocks – Tiswadi, Bardez, Pernem, Bicholim and Sattari. The economic activities of the district are Tourism, Mining, Fisheries & Agriculture. The major crops grown in the district are Paddy, Pulses, Sugarcane and Vegetables and major plantation crop are Coconut, Cashewnut, Mango & Arecanut. The district economy is predominantly tourist service oriented.

The district has a good banking network of 56 Banks (Commercial / Cooperative / Urban) with 394 rural and semi-urban branches. In addition there are 28 Primary Agriculture Cooperative Societies (PACS). The CD ratio of the district as on 31 March 2017 was only 30.11%, which is below the bench mark of 40%. The total deposits with the banking system in the district as on 31 March 2017 were ₹.34865.00 crore, against total advances of ₹ 10496 crore. The NRI deposits as on 31 March 2017 was ₹.6488.25 crore. The CDR after reducing the NRI deposits was 36.99%.

The credit projections for 2018-19 is kept at ₹ 3777.70 crore as against the previous year’s projections of ₹ 3610.38 crore.

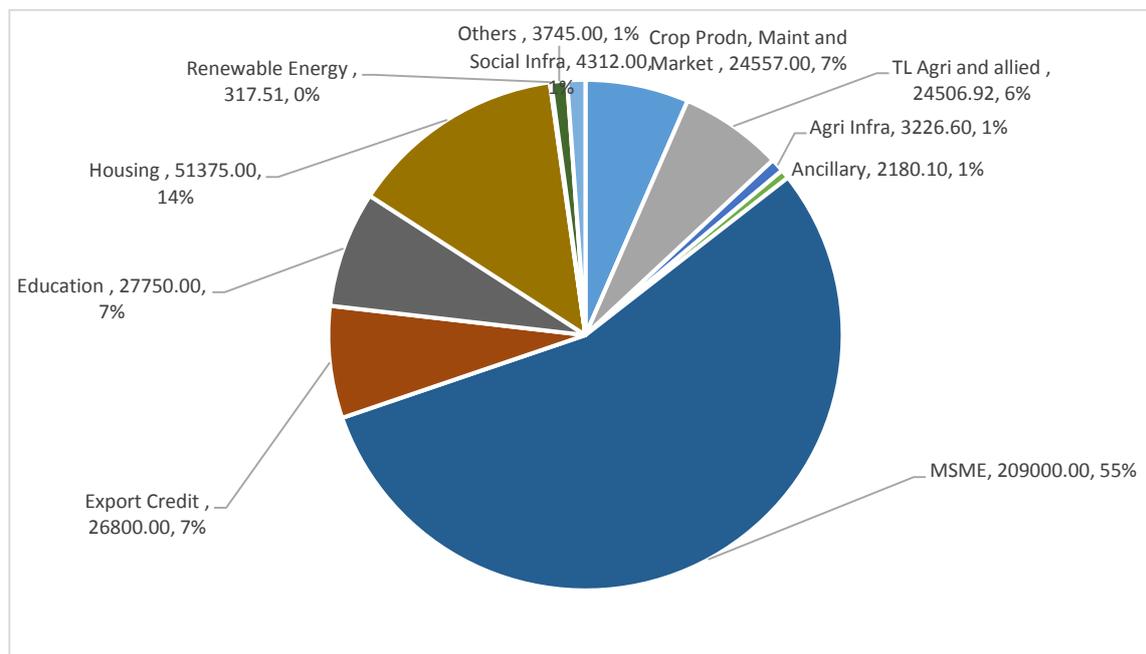
**Appendix A to Annexure 1**

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

(₹ lakh)

Sr. No.	Particulars	PLP Projections 2018-19
<b>A</b>	<b>Farm Credit</b>	
i	Crop Production, Maintenance and Marketing	24557.00
ii	Term Loan for agriculture and allied activities	24506.92
	<b>Sub Total</b>	<b>49063.92</b>
B	Agriculture Infrastructure	3226.60
C	Ancillary activities	2180.10
I	Credit Potential for Agriculture (A+B+C)	<b>54470.62</b>
II	Micro, Small and Medium Enterprises	<b>209000.00</b>
III	Export Credit	26800.00
IV	Education	27750.00
V	Housing	51375.00
VI	Renewable Energy	317.51
VII	Others	3745.00
VIII	Social Infrastructure involving bank credit	4312.00
	<b>Total Priority Sector</b>	<b>377770.12</b>

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

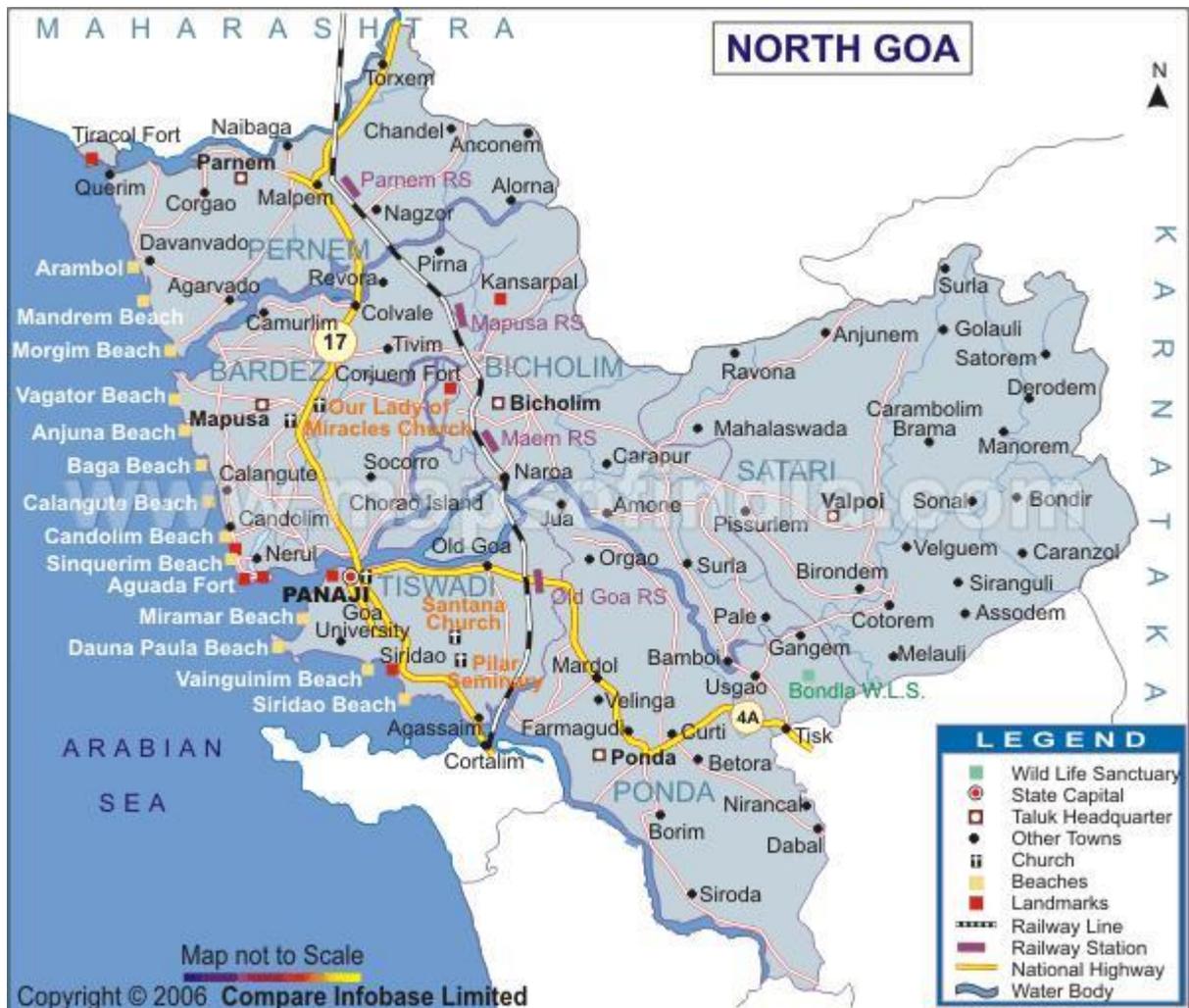


**Appendix B to Annexure 1****Summary of Sector / Sub-sector wise PLP projections – 2018-19**

(₹ lakh)

<b>Sr. No</b>	<b>Particulars</b>	<b>PLP Projections 2018-19</b>
<b>I</b>	<b>Credit Potential for Agriculture</b>	
<b>A</b>	<b>Farm Credit</b>	
i	Crop Production, Maintenance and Marketing	24557.00
ii	Water Resources	1875.00
iii	Farm Mechanisation	2235.23
iv	Plantation and Horticulture (including sericulture)	4407.19
v	Forestry and Waste Land Development	69.60
vi	Animal Husbandry – Dairy	7695.94
vii	Animal Husbandry – Poultry	606.75
viii	Animal Husbandry – Sheep, Goat, Piggery, etc.	226.88
ix	Fisheries (Marine, Inland, Brackish water)	1721.23
x	Others – Bullock, Bullock cart, etc.	5669.12
	<b>Sub Total</b>	<b>49063.92</b>
<b>B</b>	<b>Agriculture Infrastructure</b>	
i	Construction of storage facilities (Warehouses, Market yards, Godowns, Silos, Cold storage units/ Cold storage chains)	523.50
ii	Land development, Soil conservation, Watershed development	2303.25
iii	Others (Tissue culture, Agri bio-technology, Seed production, Bio pesticides/ fertilizers, Vermin composting)	399.85
	<b>Sub Total</b>	<b>3226.60</b>
<b>C</b>	<b>Ancillary activities</b>	
i	Food and Agro processing	1752.60
ii	Others (Loans to Cooperative Societies of farmers for disposing of their produce, Agri Clinics/ Agri Business Centres, Loans to PACS / FSS/ LAMPS, Loans to MFIs for on lending)	427.50
	<b>Sub Total</b>	<b>2180.10</b>
	<b>Total Agriculture</b>	<b>54470.62</b>
<b>II</b>	<b>Micro, Small and Medium Enterprises</b>	
i.	MSME – Working capital	84795.00
ii.	MSME – Investment credit	124205.00
	<b>Total MSME</b>	<b>209000.00</b>
<b>III</b>	<b>Export Credit</b>	26800.00
<b>IV</b>	<b>Education</b>	27750.00
<b>V</b>	<b>Housing</b>	51345.00
<b>VI</b>	<b>Renewable Energy</b>	317.51
<b>VII</b>	<b>Others</b> (Loans to SHGs/ JLGs, loans to distressed persons to prepay non-institutional lenders, PMJDY, loans to state sponsored organisations for SC/ST)	3745.00
<b>VIII</b>	<b>Social Infrastructure involving bank credit</b>	4312.00
	<b>Total Priority Sector</b>	<b>377770.12</b>

District Map



District Profile								
District - North Goa		State - Goa						
<b>1. PHYSICAL &amp; ADMINISTRATIVE FEATURES *</b>			<b>2. SOIL &amp; CLIMATE</b>					
Total Geographical Area (Sq.km) ( excl. ponda)	1463	Agro-climatic Zone	Western Plain and Ghat Region, Coastal region					
No. of Sub Divisions	4	Climate	Warm & humid					
No. of Blocks	5	Soil Type	Sandy & Red Loamy, Coastal Alluvium, Laterite					
No. of Villages (Inhabited)	166							
No. of Panchayats	102							
<b>3. LAND UTILISATION [Ha] *</b>			<b>4. RAINFALL &amp; GROUND WATER</b>					
Total Area Reported	142208	Rainfall [in mm]	Normal	Actual	2013-14	2014-15	2015-16	
Forest Land	31911		3473		3498	3514	2592.8	
Area Not Available for Cultivation	18120	Variation from Normal		25	41	-880		
Permanent Pasture and Grazing Land	386	Availability of Ground Water [Ham]	Net annual recharge		Net annual draft		Balance	
Land under Miscellaneous Tree Crops	221		7801.52		2546.64		5254.88	
Cultivable Wasteland	16436	<b>5. DISTRIBUTION OF LAND HOLDING (Statistical Handbook, 2011-12 (DPSE))</b>						
Current Fallow	8725	Classification of Holding	Holding		Area			
Other Fallow	0		Nos.	% to Total	Ha.	% to Total		
Net Sown Area	66409	<= 1 Ha	36520	79.58	17326	33.72		
Total or Gross Cropped Area	80058	>1 to <=2 Ha	4994	10.88	8865	17.26		
Area Cultivated More than Once	13649	>2 Ha	4377	9.54	25184	49.02		
Cropping Intensity [GCA/NSA]	121	Total	45891	100.00	51375	100.00		
<b>6. WORKERS PROFILE [in '000] (State figures, Dist breakup not available)</b>			<b>7. DEMOGRAPHIC PROFILE [in '000]</b>					
Cultivators	15.40	Category	Total	Male	Female	Rural	Urban	
Of the above, Small/Marginal Farmers	NA	Population	818	418	400	325	493	
Agricultural Labourers	14.12	Scheduled Caste	18	9	9	8	10	
Workers engaged in Household Industries	8.86	Scheduled Tribe	57	28	29	28	29	
Workers engaged in Allied Agro-activities	289.27	Literate (%)	89	94	84	NA	NA	
Other workers		BPL Families	5	NA	NA	NA	NA	
<b>8. HOUSEHOLDS [in '000]</b>			<b>9. HOUSEHOLD AMENITIES [Nos. in '000 Households] *</b>					
Total Households	153	Having brick/stone/concrete houses	148	Having electricity supply		149		
Rural Households	71	Having source of drinking water	131	Having independent toilets		120		
BPL Households	5	Having access to banking services	133	Having radio/ tv sets		125		
<b>10. VILLAGE-LEVEL INFRASTRUCTURE [Nos]</b>			<b>11. INFRASTRUCTURE RELATING TO HEALTH &amp; SANITATION [Nos] *</b>					
Villages Electrified	166	Anganwadis	1262 (State)	Dispensaries (Govt)		16		
Villages having Agriculture Power Supply	na	Primary Health Centres	10	Hospitals		Govt 13 + Pvt 53		
Villages having Post Offices	103	Primary Health Sub-Centres	95	Hospital Beds		3346		
Villages having Banking Facilities	151	<b>12. INFRASTRUCTURE &amp; SUPPORT SERVICES FOR AGRICULTURE</b>						
Villages having Primary Schools	151	Fertiliser/Seed/Pesticide Outlets [Nos]	98	Agriculture Pumpsets[Nos]		887		
Villages having Primary and sub Health Centres	109	Total N/P/K Consumption [MT]##	1997	Pumpsets Energised [Nos]		887		
Villages having Potable Water Supply	163	Certified Seeds Supplied [MT]	2	Agro Service Centres [Nos]		Govt 3		
Villages connected with Paved Approach Roads	162	Pesticides Consumed [MT](goa data)	30	Soil Testing Centres [Nos]		1		
<b>13. IRRIGATION COVERAGE [Ha]</b>			<b>14. INFRASTRUCTURE FOR STORAGE, TRANSPORT &amp; MARKETING</b>					
Total Area Available for Irrigation (NIA + Fallow)	31584	Agriculture Tractors [Nos] (incl mini tractors)	132	Plantation nurseries [Nos]		120 (8 Govt)		
Irrigation Potential Created	18731	Power Tillers [Nos]	1051	Farmers' Clubs [Nos]		65		
Net Irrigated Area (Total area irrigated at least once)	19078	Threshers/Cutters [Nos]	2216	Krishi Vigyan Kendras[Nos]		1		
Area irrigated by Canals / Channels	3897	<b>15. AGRO-PROCESSING UNITS</b>						
Area irrigated by Wells	4094	Type of Processing Activity	No of units	Cap.[MT]				
Area irrigated by Tanks	11952	Food (Rice/Flour/Dal/Oil/Tea/Coffee)	235	NA				
Area irrigated by Other Sources	1121	Sugarcane (Gur/Khandsari/Sugar)	1	150000				
Irrigation Potential Utilized (Gross Irrigated Area)	21064	Fruit (Pulp/Juice/Fruit drink)	1	NA				
<b>16. AREA, PRODUCTION &amp; YIELD OF MAJOR CROPS *</b>			2014-15		2015-16		Avg. Yield	
			Area (Ha)	Prod. (MT)	Area (Ha)	Prod. (MT)	[Kg/Ha]	
Crop			17225	76324	17554	73288	4175	
Paddy			7220	6806	7724	6488	840	
Other cereals/pulses			37355	16660	37516	11630	310	
Cashew nut			336	830	322	795	2470	
Oil Palm			977	1792	997	1216	1220	
Mango			1584	16893	1662	17750	10680	
Other Garden crops			8911	442 (La nuts)	8925	447 lakh nuts	5010	
Coconut								
<b>17. ANIMAL POPULATION AS PER CENSUS 2012 [Nos]</b>			<b>18. INFRASTRUCTURE FOR DEVELOPMENT OF ALLIED ACTIVITIES</b>					
Category of animal	Total	Male	Female	Veterinary Hospitals/Dispensaries [Nos]		14		
Cattle - Cross bred	9564	858	8706	Animal Markets [Nos]		-		
Cattle - Indigenous	20458	6845	13613	Disease Diagnostic Centres [Nos]		1		
Buffaloes	18973	3967	15006	Artificial Insemination Centers [Nos]		34		
Sheep - Cross bred	5871	NA	NA	Fishermen Societies [Nos]		11		
Sheep - Indigenous	nil	NA	NA	Animal Breeding Farms [Nos]		1		
Goat	5871	NA	NA	Animal Husbandry Trng Centres [Nos]/Vet Disp		-		
Pig - Cross bred	1280	NA	NA	Fish Markets [Nos]		NA		
Pig - Indigenous	17779	NA	NA	Dairy Cooperative Societies [Nos]		87		
Horse/Donkey/Camel	4	3	1	Improved Fodder Farms [Nos]		NA		
Poultry - Cross bred	127583	NA	NA	<b>19. MILK, FISH, EGG PRODUCTION &amp; THEIR PER CAPITA AVAILABILITY (Goa State)</b>				
Poultry - Indigenous	59399	NA	NA	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 & 10 - Census 2011; Item No. 7 -Census 2011, Item Nos. 2, 3, 5, 12, 13 & 14 - Dept. of Agr./Dir. of Eco. & Stat.; Item No. 4 - Dept. of Agr./Water Resources; Item No. 8 - BPL Survey 2002; Item No. 16 - Dept. of Agri; Item No. 17 - AH Census 2012; Item Nos. 18 & 19 - Dir. of Animal Hus./Dir. of Eco. & Stat. * Excluding Ponda block # Figures for entire state						

### District profile

The geographical area of North Goa district is 1463 sq km which accounts for 40% of the total geographical area of the State. The district shares its boundaries in the North with Sawantwadi and Dodamarg of Ratnagiri District and Kolhapur District of Maharashtra State. Towards South, the district boundaries starts with South Goa District and in the West with the Arabian Sea.

Mandovi, Tiracol and Chapora are the major rivers in the district. The soil is sandy, red loamy, coastal alluvium and laterite. Bicholim and Sattari blocks are rich in iron ore deposits. As per Census, 2011, the district has total population of about 8.18 lakh (56.10% of the total population of the state), the sex ratio is 973 per 1000 males and literacy rate is 88.7%.

Tourism is the major economic activity in the district followed by mining, agriculture and fisheries. The Micro Small and Medium Enterprises (MSME) sector covers a wide spectrum of rural based industries. Service and other priority sectors have developed around tourism and transport.

Due to heavy tourist arrivals and hospitality, 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 eradicate this menace.

The major food crops grown in the district are paddy, cereals, pulses, oilseeds, sugarcane and vegetables. 70% of the Gross Cropped Area (GCA) is under plantation crops. The principal horticultural crops grown are cashewnut, coconut, arecanut, mango, banana, pineapple, spices, etc. The State Govt. provides attractive subsidy for polyhouses, protected cultivation of flowers and vegetables. Spices, especially pepper and nutmeg are supplementary crops.

The average yield of major crops was paddy (4175 kg/ha), pulses (840 kg/ha), cashewnut (310 kg/ha), oil palm (2410 kg/ha), mango (1220 kg/ha).

Marine fishing is an important activity in the district. Inland fisheries has picked up considerably. Crab and mussel farming has potential in the district.

Dairy is another activity which has scope in the district. There is a gap in demand and supply of milk as the production of milk is not sufficient. The *Sudharit Kamdhenu* Scheme gives scope for farmers as well as JLGs to take up this activity. Community dairy scheme introduced by the State Govt. for large scale integrated dairy development gives boost for the dairy sector.

The State of Goa enacted the Goa Panchayat Raj Act, 1994, that has provided for Two Tier Panchayat Raj System i.e. Gram Panchayat and the Zilla Panchayat. Subsequently the Act was amended and the middle level Panchayat was incorporated i.e. Taluk or Block level Panchayat. North Goa has 166 villages with 102 Village Panchayats.

Banking Profile																																												
District -	North Goa		State - Goa			Lead Bank		State Bank of India																																				
<b>1. NETWORK &amp; OUTREACH (As on 31/03/2017)</b>																																												
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	41	309	140	169	0.00	0.00	NA	5	0.42	495																																		
Regional Rural Bank	NA	NA	NA	NA	NA	0	NA	NA	NA	NA																																		
State Coop. Bank	1	35	19	16	0	0	NA	NA	4.74	4371																																		
Coop. Agr. & Rural Dev. Bank	NA	NA	NA	NA	NA	0	NA	NA	NA	NA																																		
Primary Agr. Coop. Society	28	28	28	0	0	0	NA	NA	5.93	5464																																		
Others (Urban Coop. Banks)	14	50	9	41	0	0	NA	NA	3.32	3060																																		
All Agencies	84	422	196	226	0	0	NA	NA	0.39	363																																		
<b>2. DEPOSITS OUTSTANDING</b>																																												
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	1784975	1270999	1308182	2.93	69.67	287906525	312376015	319113069	2.16	91.53																																		
Regional Rural Bank	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA																																		
Cooperative Banks	273089	139525	159285	14.16	8.48	8788609	7205834	8245278	14.43	2.36																																		
Others(ucb)	440189	392901	410255	4.42	21.85	21301924	20442537.12	21291831	4.15	6.11																																		
All Agencies	2498253	1803425	1877722	4.12	100	317997058	340024386	348650177	2.54	100																																		
<b>3. LOANS &amp; ADVANCES OUTSTANDING</b>																																												
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	175761	114865	170263	48.23	79.52	88690002	97419876	88476455	-9.18	84.29																																		
Regional Rural Bank	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA																																		
Cooperative Banks	22411	16936	17096	0.94	7.98	6661125	6017208	6102352	1.42	5.81																																		
Others(ucb)	37264	25254	26765	5.98	12.50	10290090	10449795.84	10386809	-0.60	9.90																																		
All Agencies	235436	157055	214124	36.34	100	105641217	113886879	104965616	-7.83	100																																		
<b>4. CD-RATIO</b>																																												
Agency	CD Ratio			5. PERFORMANCE UNDER FINANCIAL INCLUSION (No. of A/cs)																																								
	31 Mar 15	31 Mar 16	31 Mar 17																																									
Commercial Banks	30.81	24.88	27.73	<table border="1"> <thead> <tr> <th rowspan="2">Agency</th> <th colspan="2">During 2016-17</th> <th colspan="2">Cumulative</th> </tr> <tr> <th>Deposit</th> <th>Credit</th> <th>Deposit</th> <th>Credit</th> </tr> </thead> <tbody> <tr> <td>Commercial Banks</td> <td>37183</td> <td>55398</td> <td>1308182</td> <td>170263</td> </tr> <tr> <td>Regional Rural Bank</td> <td>0</td> <td>0</td> <td>NA</td> <td>NA</td> </tr> <tr> <td>Cooperative Banks</td> <td>19760</td> <td>160</td> <td>159285</td> <td>17096</td> </tr> <tr> <td>Others</td> <td>17354</td> <td>1511</td> <td>410255</td> <td>26765</td> </tr> <tr> <td>All Agencies</td> <td>56943</td> <td>55558</td> <td>1877722</td> <td>214124</td> </tr> </tbody> </table>							Agency	During 2016-17		Cumulative		Deposit	Credit	Deposit	Credit	Commercial Banks	37183	55398	1308182	170263	Regional Rural Bank	0	0	NA	NA	Cooperative Banks	19760	160	159285	17096	Others	17354	1511	410255	26765	All Agencies	56943	55558	1877722	214124
Agency	During 2016-17		Cumulative																																									
	Deposit	Credit	Deposit								Credit																																	
Commercial Banks	37183	55398	1308182								170263																																	
Regional Rural Bank	0	0	NA								NA																																	
Cooperative Banks	19760	160	159285	17096																																								
Others	17354	1511	410255	26765																																								
All Agencies	56943	55558	1877722	214124																																								
Regional Rural Bank	NA	NA	NA																																									
Cooperative Banks	75.79	83.50	74.01																																									
Others(ucb)	48.30	59.56	48.78																																									
All Agencies	33.22	33.49	30.11																																									
<b>6. PERFORMANCE TO FULFILL NATIONAL GOALS (As on 31/03/2017)</b>																																												
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	27678469	26.37	3488152	3.32	2727003	2.60	36481	0.03	11937807	11.37																																		
Regional Rural Bank	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA																																		
Cooperative Banks	3246361	3.09	432917	0.41	47423	0.05	450820	0	458498	0.44																																		
Others	3048677	2.90	0	0.00	246744	0.24	36.00	0	233122	0.22																																		
All Agencies	33973507	32.37	3488152	3.32	2973747	2.83	487337	0.46	12629427	12.03																																		
<b>7. AGENCY-WISE PERFORMANCE UNDER ANNUAL CREDIT PLANS (Priority Sector+Non Priority Sector)</b>																																												
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	18511179	19490578	105.29	23363307	52750880	225.79	28720290	22778957	79.31	136.80																																		
Regional Rural Bank	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA																																		
Cooperative Banks	2507335	2292133	91.42	3158327	2425724	76.80	305535	14400	4.71	57.64																																		
Others	3460644	2897887	83.74	3639575	6353402	174.56	1527675	23043	1.51	86.60																																		
All Agencies	24479158	24680598	100.82	30161209	61530006	204.00	30553500	22816400	74.68	126.50																																		
<b>8. SECTOR-WISE PERFORMANCE UNDER ANNUAL CREDIT PLANS</b>																																												
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	2462170	743437	30.19	2233688	1644598	73.63	2010000	1697900	84.47	62.76																																		
Term Loan (Agr)	2098244	1764820	84.11	2055249	1228156	59.76	2258700	2092100	92.62	78.83																																		
Total Agri. Credit	4560414	2508257	55.00	4288937	2872754	66.98	4268700	3790000	88.79	70.26																																		
Non-Farm Sector	4267912	2259087	52.93	3663623	5102677	139.28	2609800	18808900	72.09	88.10																																		
Other Priority Sector	15650832	19913254	127.23	15666353	15064041	96.16	194000	217500	112.11	111.83																																		
Total Priority Sector	24479158	24680598	100.82	23618913	23039472	97.55	30553500	22816400	74.68	91.02																																		
<b>9. RECOVERY POSITION</b>																																												
Agency	As on 31.03.2015			As on 30.03.2016			As on 30.03.2017			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	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA																																		
Regional Rural Bank	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA																																		
Cooperative Banks	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA																																		
Others(ucb)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA																																		
All Agencies	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA																																		

Sources : Lead Bank & SLBC

### Banking Profile

The district has good banking network with 41 Commercial Banks, a State Coop Bank, 14 Urban Coop Banks, 28 PACS. There are 309 bank branches of Commercial Banks with 140 in rural areas and 169 in semi urban areas. The Goa State Cooperative Bank, with its Two Tier structure, has 35 branches with 19 in rural areas and 16 in semi-urban areas. The UCBs have 50 branches with 9 in rural areas and 41 in semi-urban areas. There are 28 PACS in the district. PACS in Pernem, Bardez and Sattari blocks are active. There are no Regional Rural Bank and Land Development Bank in the district. The Lead bank of the district is State Bank of India.

Direct agriculture advances stood at ₹ 392.10 crore and percentage of direct agriculture advance to total advances was 3.74% as on 31 March 2017.

As on 31 March 2017, the total deposits stood at ₹ 34865.01 crore and total advances stood at ₹ 10496.56 crore.

The performance under priority sector category is 32.37% of the total advances. However, direct advances is 0.46% of total advances. Credit off take by agriculture sector is low mainly due to land title issues and inability to offer land as collateral for loans exceeding ₹ 1 lakh.

The achievement of ACP targets for crop loans was 84.47% and Agri. Term loan was 98.01%. The total achievement of ACP targets for priority sector was 74.68% as on 31 March 2017.

As on 31 March 2017, 69235 PMJDY accounts were opened with total deposits of ₹ 9.18 crore. Of this, Overdraft facility was availed by 6867 accounts. The MUDRA scheme is also being actively implemented in the district, as on 31 March 2017, 6745 MUDRA loans to the tune of ₹ 498.71 crore were sanctioned.

Under Stand-Up India, there are 33 accounts with ₹ 7.18 crore worth loan sanctioned. For 29 accounts an amount of ₹ 4.98 crore has been disbursed by 11 banks.

In Goa, all Govt. subsidies/grants and financial assistances are directly transferred to beneficiary account through ECS. As per the Census 2011, 86% of the households have access to banking services.

There are 5416 SHGs in the district with aggregate deposit of ₹ 10.25 crore as on 31 March 2017. 1076 SHGs are credit linked and the remaining 4340 SHGs are yet to be credit linked.

LBR system has been dispensed with after the introduction of new software by the Lead Bank. The new software captures sector-wise data as per RBI guidelines and also data on SHGs and JLGs. However, the new software does not allow sub sector data to be uploaded.

### 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 channeling 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 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.

S. No.	Sector	Methodology of estimation of credit potential
1	Crop loans	<ul style="list-style-type: none"> <li>• Collection of data on Gross Cropped Area for a period of 10 years and data on land holdings</li> <li>• Distribution of Gross Cropped Area between Small Farmer/Marginal Farmer and Other farmers based on the total land occupied by small and marginal farmers on one hand and other farmers on the other.</li> <li>• Make assumption to cover 100% of Small/Marginal Farmers and 20% to 50% of Other Farmers;</li> <li>• Study the cropping pattern</li> <li>• Estimation of credit potential taking into account Scale of Finance and also the KCC guidelines in vogue</li> </ul>

S. No.	Sector	Methodology of estimation of credit potential
		<ul style="list-style-type: none"> <li>Block-wise allocation of potential taking into account credit absorption capacity in a particular block, cropping pattern, etc.</li> </ul>
2	Water Resources	<ul style="list-style-type: none"> <li>MI potential is the area that can be brought under irrigation by ground and surface water;</li> <li>Collection of data on ultimate irrigation potential, area already brought under irrigation and balance potential available under groundwater and surface water for the district</li> <li>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;</li> <li>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.</li> <li>Preference of farmers for different MI structures like dug wells, bore wells, DCBW, etc. is to be taken into account.</li> <li>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.</li> </ul>
3	Farm Mechanisation	<ul style="list-style-type: none"> <li>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;</li> <li>Calculation of requirement of number of tractors assuming one tractor per 30 acres and 45 acres of irrigated and unirrigated cropped area;</li> <li>Adjustment of tractor potential with land holdings</li> <li>Based on the cropping pattern, topography etc similar assessment is made for power tillers, combine Harvesters etc</li> </ul>
4	Plantation and Horticulture	<ul style="list-style-type: none"> <li>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;</li> <li>Feasibility and possibility of shifting from food crops to plantation crops;</li> <li>Estimation of replanting by taking into account approximate economic life of a few plantation crops</li> <li>Estimation of potential for rejuvenation of existing plantation</li> </ul>
5	Animal Husbandry – Dairy	<ul style="list-style-type: none"> <li>Collection of data on number of milch animals as per the latest census</li> <li>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;</li> <li>1/6<sup>th</sup> 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</li> </ul>

S. No.	Sector	Methodology of estimation of credit potential
		are on 2 <sup>nd</sup> and 3 <sup>rd</sup> 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                             | <ul style="list-style-type: none"> <li>i. Provides inputs/information on Exploitable potential vis-a-v-s credit available</li> <li>ii. Potential High Value Projects/Area Based schemes</li> <li>iii. Infrastructure support available which can form basis for their business/development plans.</li> </ul> |
| 2 | Government Agencies/<br>Departments | <ul style="list-style-type: none"> <li>i. Developmental infrastructure required to support credit flow for tapping the exploitable potential</li> <li>ii. Other support required to increase credit flow</li> <li>iii. Identification of sectors for Government sponsored programme</li> </ul>               |
| 3 | Individual/Business<br>entities     | <ul style="list-style-type: none"> <li>i. Private investment opportunities available in each sector</li> <li>ii. Commercial infrastructure</li> <li>iii. Information on various schemes of Govt &amp; Banks.</li> </ul>  |

### 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

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

- a. The target for agricultural credit in 2017-18 has been enhanced to ₹ 10 lakh crore.
- b. Special efforts will be made to ensure adequate flow of credit to the under serviced areas, the eastern states and Jammu & Kashmir.
- c. 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.
- d. 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.
- e. 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.
- f. Enhancement in the corpus of Long Term Irrigation Fund (LTIF) with NABARD from ₹ 20,000 crore to ₹ 40,000 crore.
- g. 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'.
- h. 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.
- i. A model law on contract farming would be prepared and circulated among the states for adoption.
- j. 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.

### B. Reserve Bank of India

- a. 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).
- b. 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)
- c. 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)
- d. 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)
- e. 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)

- f. 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)
- g. '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 RBI/2016-17/66/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)
- h. 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)
- i. 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.
- j. 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)
- k. 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.
- l. 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)
- m. 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.

### **C. NABARD**

- a. Encouraging capital formation through allocation of increased share of long term loans in agriculture credit.
- b. 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.
- c. Operationalisation of Long Term Irrigation Fund for the funding of central and state shares for the identified projects under Pradhan Mantri Krishi Sinchayi Yojana.
- d. Focusing on policies to enable Doubling of farmers' income by the year 2022
- e. Promotion of additional 3000 FPOs aimed at aggregation of producers, market linkages and credit expansion to uncovered farmers;
- f. Financing Producers Organisations through its subsidiary - NABKISAN
- g. Broad basing the activities for continued support to enhancing livelihood activities of tribals through Tribal Development Fund
- h. Encourages formation and Nurturing of 'Off Farm Producers Organisations" through "Off Farm Sector Promotion Fund"
- i. "Outcome based approach" to training of rural youth through RUDSETI/RSETIs
- j. Continued focus on creation of Rural Infrastructure through RIDF and also through NABARD Infrastructure Development Assistance (NIDA)
- k. Support to State Government for financing of sprinkler/drip irrigation systems, piped water supply through the "Micro Irrigation Fund"

- l. Implementation of E-Shakti 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
- m. Mainstreaming of the pilots tested under Livelihood Enterprise Development Programme (LEDP) for promotion of livelihoods among SHG members.
- n. Promotion of Climate Smart Agriculture
- o. Support for undertaking activities under the “Swachh Bharat Yojana”
- p. Launching of NABARD All India Financial Inclusion Survey to get deeper understanding of livelihood and financial inclusion aspects of rural households
- q. 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.
- r. Thrust on conversion of KCC to RuPay Kisan Cards to enable farmers to undertake digital financial transactions in the post-demonetization period
- s. Conduct of special camps on “Going Digital” with stress on digital payments

#### **Highlights of Budget 2017-18 of State Govt.**

- a. In order to make agriculture commercially viable and to double the income of the farmers by 2022, a target set by the Hon’ble prime Minister it is intended to revolutionise the agricultural sector with greater emphasis on horticulture crops such as coconut, arecanut, mango, cashew spices and also encourage floriculture and vegetable farming. This would give better yield and higher income per acre for the land owned by the agriculture farmer.
- b. Mango is one of the important fruit crop with tremendous potential and scope for commercial cultivation in the state. Introduction of scheme to take up commercial cultivation of mango in a most scientific manner by cultivating fallow lands as well as uncultivable rocky areas by adopting modern techniques.
- c. Cultivation of sugarcane by adopting modified Sustainable Sugarcane Initiatives (SSI) has proven to enhance production and productivity by maintaining requisite plant population in the field. 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 hectare. Enhance the assured price for sugarcane to ₹ 3000 per ton from present ₹ 2500/-per ton during 2017-18 with a financial outlay of ₹ 800.00 lakh.
- d. In order to encourage farmers to undertake piggery, the ₹ Varah Palan’ Scheme with provision of 60% to 75% subsidy has been introduced.
- e. Poultry farming and Goat rearing in the state will be encouraged.
- f. Encourage women, youths and Self-Help Groups to undertake value added products of fisheries by providing all necessary support.

## Chapter 2: Government Sponsored Programmes with Bank Credit

To encourage farmers to take up projects, Gol 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 Gol is passed onto the financing banks for release to the scheme beneficiaries.

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

### A. Details of Gol 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 Gol	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.

**B. 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.

**C. 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	Farmer Club Formation	Development through Credit, Technology Transfer & Value Addition	₹ 15,000 / year for 03 years
4	Farmer Sector Promotion Fund (FSPF)	To promote and disseminate new and innovative technology in agriculture	Project based (90% of the project cost)
5	Micro Entrepreneurship Development Programme (MEDP)	To promote micro entrepreneurship among matured SHGs.	₹ 50,000/- per MEDP. ₹ 128 / person / day for 2-3 weeks duration
6	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)
7	Livelihood and Entrepreneurship 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
8	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.
9	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
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

Agriculture Sector has three broad components, viz., Farm Credit, Agriculture Infrastructure and Ancillary Activities, with various subsectors, referred to in the following paragraphs.

#### 3.1. FARM CREDIT

The loans under Farm credit includes individual farmers / SHGs / JLGs directly engaged in Agriculture and Allied Activities, and loans to corporate farmers, farmers' producer organizations/companies, partnership firms and co-operatives of farmers engaged in Agriculture and Allied Activities. The credit potential under various sub-sectors has been estimated in the following paragraphs.

##### 3.1.1. Crop Production, Maintenance and Marketing

###### 3.1.1.1. Introduction

- 1) It is aimed to achieve 6% growth in agricultural sector in respect of food grain, milk, vegetables and all other agricultural product.
- 2) Paddy, pulses, groundnut, sugarcane and vegetables are the major crops cultivated in North Goa District. The major plantation crops grown are cashewnut, arecanut and coconut.
- 3) The area, production and productivity of major crops in the district are given below:

Crop	2014-15		2015-16			2016-17		
	Area	Prodn	Area	Prodn	Productivity	Area	Prodn	Productivity
Paddy	17225	76324	17554	73288	4175	17327	73917	8459
Pulses	7210	6806	7724	6797	840	4556	4865	1920
Groundnut	2271	4290	1898	4035	2126	1689	2352	3972
Sugarcane	124	7553	119	6068	50989	124	4581	36943
Vegetables	3338	38080	3277	37384	11408	3349	38856	23267

(Source: Dept. of Agriculture)

- 4) Paddy productivity has increased, however, the area under cultivation and production has been reducing over the past three years due to urbanization of villages and absentee landowners leaving the land fallow. Same is the case with pulses, sugarcane and groundnut too. As against the national productivity of 2177 MT/ha, the average productivity of paddy is 4175 MT/ha in Goa. As regards pulses, the national average productivity is 690 MT/ha, as against 840 MT/ha recorded in Goa. In case of vegetables, the area has been increasing due to marketing support by the State Govt.

###### 3.1.1.2. Credit flow in the past three years:

- 1) The crop loan disbursements were consistently on the rise since last three years, with ₹ 7434.37 lakh during 2014-15, ₹ 16445.98 during 2015-16 and ₹ 16979.00 during 2016-17.

###### 3.1.1.3. Assessment of Credit Potential for 2018-19

- 1) Taking into account the available and planned infrastructure and the gaps therein, the potential for Crop is assessed as under:

(₹ lakh)

Sr. No.	Activity	Scale of Finance	2018-19		
			Phy.(Ha)	Fin. outlay	Bank Loan
1	Paddy	0.700	14900	10430.00	10430.00
2	Pulses	0.400	4950	1980.00	1980.00
3	Sugarcane	1.600	250	400.00	400.00
4	Vegetables	1.000	3200	3200.00	3200.00

Sr. No.	Activity	Scale of Finance	2018-19		
			Phy.(Ha)	Fin. outlay	Bank Loan
5	Misc-maint. of PH crops	0.500	1500	2250.00	2250.00
6	Groundnut	0.600	1050	630.00	630.00
A	<b>Total</b>		25850	18890.00	18890.00
B	Post-harvest/ household/ consumption requirements (@10% of A)			1889.00	1889.00
C	Repairs and maintenance expenses of farm assets etc. (@20% of A)			3778.00	3778.00
	<b>Total (A+B+C)</b>			<b>24557.00</b>	<b>24557.00</b>

The details of block-wise & activity-wise projections are given in **Annexure I**.

#### 3.1.1.4. Availability/Gaps in infrastructure and support services:

- 1) Subsidy ranging from 50% to 75% on cultivation of vegetables and sugarcane, purchase of HYV seeds, seed treatment chemicals, farm fencing, purchase of machinery, digging wells, setting up of vermicomposting units and biogas units is being provided by the State Government. For promoting SRI in paddy, cono weeders are provided free of cost and ₹ 1/sqm is provided as incentive. Hire charges of machinery are subsidized to the extent of 50% of the standard hire charges for specified number of hours.
- 2) To revitalize Khazan lands, the State Govt. has introduced a scheme, wherein cost of salinity resistant paddy (Korghut) seed is subsidized 100% and a one-time assistance of 50% subsidy on expenditure incurred on machinery.
- 3) Under Assured Support Price scheme, paddy, sugarcane and alsando are with assured prices at ₹ 17/kg, ₹ 2400/tonne and ₹ 70/kg respectively. The difference between the price paid to the farmer and the rates indicated above is paid as support price.
- 4) The Goa State Horticultural Corporation Ltd., procures vegetables produced by the farmer at a minimum prefixed rate and markets the same through its outlets called 'Krishi Ghars'.
- 5) Prime Ministers Fasal Bima Yojana has been notified by the State Govt. and covers paddy, pulses, groundnut and sugarcane and it is mandatory to cover all loanee farmers. Besides, State Govt. scheme "Shetkari Adhar Nidhi" provides compensation to farmers who suffer losses due to various factors like unseasonal rains, floods, landslides, siltation, drought, attack of pest and diseases, fire etc. However, plantations crops are not covered under the crop insurance schemes, due to non-availability of yield data for ten years.
- 6) Fragmented land holding and leasing of land and consequent lack of access to institutional loans are the major constraints in financing crop cultivation.
- 7) Govt. of Goa has been issuing Krishi Cards to farmers including lessee farmers.
- 8) Farmers club help in farmers in integrating credit with other services. However, out of 106, 67 Farmer Clubs are in North Goa and not many are active as banks have not maintained liaison with the clubs.
- 9) Strengthening and Modernization of Plant Quarantine Facilities (SMPQF): The objectives of Plant Quarantine is to prevent introduction of exotic pests, diseases and weeds which are likely to be introduced through import of agricultural commodities or plants material into India. Plant Quarantine Station, Goa has started functioning at Goa International Airport, Goa.
- 10) 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. Henceforth, all Short Term crop loan accounts have to be Aadhaar linked.
- 11) GoG provides subsidy from 50 to 75% for agricultural operations.

- 12) Seeds and planting material: Seeds and planting material are supplied by Goa Bhagayatdar and Government farms at Old Goa, Mapusa, Pernem and Valpoi. A private agency, Bharatiya Swabhiman Kisan Panchayat has started producing paddy seeds.
- 13) Storage Facilities : There are three private cold storages at Pernem, Ponda and Mapusa and two Govt. owned cold storages at Panaji and Betim.
- 14) There are 4 market sub yards at Sanquelim, Mapusa, Valpoi and Pernem equipped with modern and scientific infrastructural facilities.

#### **3.1.1.5. Suggested action points:**

- 1) State Government to take steps to include horticulture crops under PMFBY to cover more farmers in the State.
- 2) State Government to build small scale/mini cold storages or cold rooms at village level.
- 3) Quality planting material is in demand for coconut, arecanut, cashew and pepper. Private nurseries with captive stock and scion population need to be encouraged instead of procuring planting material from outside the State.
- 4) A modern rice mill built with RKVY support has been commissioned at Pernem. Organised primary and secondary processing activities need to be promoted through Farmers PO/PCs.
- 5) The organic inputs are sourced locally but biofertilizers are brought from neighbouring states. However, use of organic inputs is not prevalent due to non-availability, high transportation and application costs. Village level production units will improve availability, cut transportation costs and encourage farmers to use them.
- 6) There is a plan to establish market at Banastarim apart from taluk level procurement centres. Village level procurement centres linking the producer directly to the consumer are required.
- 7) Banks to finance landless farmers based on krishi cards to mitigate the problem of lack of access to institutional finance.
- 8) Banks should promote and make use of Farmer Clubs for effective credit delivery through proper borrower appraisal and loan monitoring. Compulsory savings should be encouraged among the members of the Farmer Clubs, for sustaining the activities and making them more vibrant.
- 9) Banks/FLCs to organize financial literacy camps / Go Digital programmes to ensure continued access of farmers to banking services from formal financial system, else, they may be exploited by non-formal sources. Awareness needs to be created among farmers about the high hidden costs in credit purchases of farm inputs by way of over-pricing.
- 10) Bold steps such as incentivizing small/marginal farmers for purchase of land for agricultural purposes and also incentivizing farmers wanting sell their small land holdings will help in land aggregation.
- 11) Issue of Soil Health Cards to all farmers.
- 12) Setting up of Rural Haats help in marketing of rural produce.
- 13) Hub and Spoke Mode for aggregation and primary processing of agri produce will reduce post harvest losses and consequently improve income levels of farmers.

#### **3.1.1.6. Potential for increasing farmers' income:**

- 1) As many farmers have adopted mono-cropping, they are not able to secure risk mitigation mechanism. With inter-cropping and taking up allied activities they would be able to develop risk mitigation mechanism and also to increase their income. As given in the seven point strategy of doubling of farmers' income by 2022, farmers need to focus on water saving irrigation systems. Farm Management, use of seeds and nutrients should be based on soil health. Profitability in food crops depends on productivity. Therefore, methods like System of Rice Intensification (SRI) and Sustainable Sugarcane Initiative (SSI) in sugarcane need to be adopted by paddy and sugarcane growers, respectively. Farmers having polyhouses need to take up cultivation of suitable crops for optimum use of the infrastructure and generating additional income.

### 3.1.2. Water Resources

#### 3.1.2.1. Introduction:

In order to promote judicious use of water ensuring ₹ per drop more crop' of water in agriculture for drought proofing, the Government has recently launched the Pradhan Mantri Krishi Sinchay Yojana (PMKSY) aiming at providing water to every field of agriculture, namely *Har Khet Ko Paani*. (*Economic Survey 2015-16, Govt. of India*).

- 1) The average annual rainfall of the District is 3473 mm, but being situated in the Western Ghats Region and the steep eastern mountain slopes result in westward water run-off to the rivers and the Arabian Sea.
- 2) The Anjunem Medium Irrigation Project catering to Keri, Morlem, Poriem and Karapur areas of Sattari and Bicholim blocks with a CCA of 2100 ha.
- 3) The Amthane Minor Irrigation Project in Sattari block has a CCA of 160 ha. It is estimated that 50% of 20294 ha under surface & groundwater structures coverage is in North Goa. The main Lift Irrigation Projects are in the basins of Mandei (Mandovi) and Valvonta rivers in Sattari and Bicholim blocks.
- 4) Total storage capacity of 55 Million Cubic Meters (MCM) has been created by 3 dams, viz., Anjunem, Panchwadi and Amthane in Sattari, Ponda and Bicholim blocks, respectively.
- 5) Creating awareness and capacity building on water conservation, irrigation schemes through Agricultural Technology Management Agency (ATMA), promotion of drip, sprinkler and pumpsets to achieve 'per drop more crop' and watershed programmes to be implemented through a Watershed Society formed for this purpose.
- 6) As per the 2011 report of Dynamic Ground Water Resources of India, the net annual ground water availability of North Goa is at 8554 ham (30% ground water development) and all the blocks are in 'safe' category.
- 7) The Water Resources Department implements Surface Water schemes.
- 8) With a view to ensuring completion of uncompleted projects under Accelerated Irrigation Benefits Programme (AIBP), Long Term Irrigation Fund (LTIF) with a corpus of ₹ 20000 crore for funding of central and state identified projects under PMKSY has been created in NABARD.

#### 3.1.2.2. Credit flow in the past three years:

Credit flow to minor irrigation activities for 2014-15 was ₹ 383.83 lakh, ₹ 349.44 lakh and ₹ 349.13 lakh for 2015-16 and 2016-17 respectively.

#### 3.1.2.3. Assessment of Credit Potential for 2018-19:

Minor irrigation structures like dug wells, pumpsets, small LIS and micro irrigation structures drip and sprinkler systems are taken up by farmers with bank loan. Considering the infrastructure available, planned and gaps identified, the credit potential assessed for water resources is assessed as under:

(₹ lakh)

Sr. No.	Activity	Unit size	UC	2018-19		
				Phy. Units	Fin. outlay	Bank loan
1	Dugwells (dia 3m,depth 8-10m)	No.	1.60	595	952.00	714.00
2	Pumpsets -5HP, 3 phase, submersible	No.	0.30	595	178.50	133.88
3	Drip irrig. (for coconut)	Ha.	0.40	970	388.00	291.00
4	Drip irrig.- banana	Ha.	1.00	190	190.00	142.50
5	Sprinkler irrig.-arecanut	Ha.	0.50	320	160.00	120.00
6	Small LIS (pumpsets, pipes)	No.	1.30	130	169.00	126.75
7	Deepening of existing wells	No.	0.50	285	142.50	106.88
8	Misc. works (repairs, pipelines, etc.)		1.52	0	320.00	240.00
<b>Total</b>				<b>3085</b>	<b>2500.00</b>	<b>1875.00</b>

The details of block-wise and activity-wise projections are given in **Annexure I**.

**3.1.2.4. Availability/Gaps in infrastructure and support services:**

- 1) The Govt. of India 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.
- 2) 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.
- 3) Besides helping build up ground water level in the aquifers storage structures created by the Bandharas also help to meet the growing water requirement of the State through augmentation of water supplies to water treatment plants, especially during the lean season.
- 4) 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.
- 5) Registration of wells is in progress. Forms are made available in each taluka at designated places and also on department website. Government has issued a notification to encourage compulsory registration by all citizens who have wells in their properties. The State Government has introduced the "Nital Baim Scheme" from 2017-18 under which financial assistance of ₹ 50,000/- will be provided for repair / renovation of existing registered wells which are used for drinking / irrigation purpose.
- 6) Solar pumps are not much used due to their high initial cost and easy availability of electrical power. Use of diesel pumps is also done to a limited extent.
- 7) The Water Resources Department (WRD) provides 50% subsidy (max. ₹ 75000) in respect of the cost of construction of a Dug well, 50-90% subsidy on pumpsets and 50% subsidy on water conveying pipelines. Under the National Mission on Micro Irrigation, 75% subsidy is provided for sprinkler and 90% for drip irrigation systems (including State Govt. subsidy).
- 8) Govt. also provides 50% subsidy for construction of roof top rain water harvesting schemes of individuals, residential and commercial complexes.
- 9) Rabi cultivation is dependent on irrigation form tanks, wells and/or canals. Construction of open irrigation wells and bore wells are proposed in line with stipulation of 100 m distance between wells as per draft ground water policy. For identifying sites for dug-wells and bore-wells, detailed geo-physical surveys suggesting block-wise sites could be conducted.
- 10) The enactment of 'Water User Policy' may be expedited to regulate conjunctive use of ground / surface water for proper planning, developing and monitoring of all MI structures.

**3.1.2.5. Suggested action points:**

- 1) Water harvesting projects and water saving devices like drip / sprinkler systems may be given importance for commercial crops like arecanut and coconut.
- 2) Salinity ingressions due to lack of drainage and protection walls is a major issue in coastal villages, which needs to be addressed by WRD. Flood protection measures are required in most of the coastal areas as erosion problems have become very critical.
- 3) Most of the farmers do not go for second crop mainly due to lack of irrigation facilities and labour unavailability. Department may also guide farmers to take up appropriate steps to tackle water crisis.
- 4) Farm based activity to tree based activity is the need of the hour. In the coming years, conservation of water and water bodies, viz., rivers, canals, nallahs, should be the mantra. Planting trees along the river banks say 1 km on each side, will improve water recharge and increase in rains, thereby increasing vegetation.
- 5) As the State receives, normal rainfall, rainwater harvesting needs to be popularised to recharge the groundwater.
- 6) The canals networks in the district need to be completely overhauled by taking all the stakeholders into confidence.

**3.1.2.6. Potential for increasing farmers' income:**

Focus on irrigation with the aim of "per drop, more crop" helps not only in saving water, also saving on input costs and containing land degradation. Adoption of SRI/DSR in paddy cultivation helps in reducing water use to the extent of at least 30%.

**3.1.3. Farm Mechanization****3.1.3.1. Introduction**

- 1) Technology plays a vital role in increasing production as well as productivity. Mechanizing farm operations is critical for efficient management and optimizing income. Utilization of various farm implements will not only make farming easier, it also increases the income of farmers. To address labour shortage and reducing labour cost, farm mechanization is the only alternative. Besides, Govt. of Goa provides attractive subsidy on the farm implements. The farmers in the state are employing mechanization to overcome labour shortages.
- 2) Major crop being paddy followed by vegetables/ pulses and sugarcane, there is ample scope for farm mechanization. Farm machinery commonly used are power tillers, tractors, trailers, land levellers, rotavators, weed/brush/chaff cutters, sugarcane crushers, threshers and combine harvesters.
- 3) The Gross Sown Area is 80058 ha and Net Sown Area is 66409, the cropping intensity is 121%. The average size of holding is 1.12 ha in the district. The marginal and small landholdings (<2 ha) constitute 91% of the total land holdings in the district and 51% of the area of landholdings.
- 4) There are about 24 Govt. owned tractors (35 HP and more) in the district. Besides, 53 mini tractors (<18 HP), 1051 power tillers, 55 tractors, 221 mini tillers operating in the State. 15 private owned combine harvesters are also operating in the District.
- 5) To promote mechanization, 75% subsidy is provided on purchase of agricultural machinery. Govt. also provides 50% subsidy on the custom hire service charges, with subsidy limited to standard hire charges (₹ 250/hr for tractors and ₹ 2000/hr for paddy combines) for specified number of hours. Conoweeders are given free of cost to farmers undertaking SRI method of paddy cultivation, if the cultivated area is atleast 2000 sqm.
- 6) To encourage farmers to use paddy transplanters, subsidy upto 50% (max. ₹ 1 lakh) is provided on purchase of trays/silpaulin sheets for raising mat nursery.
- 7) Department of Agriculture provides training for tractor driving, operation and maintenance of various agricultural machinery to unemployed youth having marginal land. At the end of training, a tool kit is provided to the trainees.
- 8) Taking into account the difficulties faced by farmers, the State Govt. has included monkey repellents, coconut climbers and paddy seeders in the subsidy scheme.

**3.1.3.2. Credit flow in the past three years:**

An amount of ₹ 1,337.59 lakh was disbursed during 2014-15 and ₹ 1,149.67 lakh during 2015-16.

**3.1.3.3. Assessment of Credit Potential for 2018-19:**

Since credit linkage is not compulsory for availing subsidy, and collateral is required for loans exceeding ₹ 1 lakh, credit flow to farm mechanization is limited. Besides, bank credit is not a prerequisite for availing subsidy. Taking into account the available and planned infrastructure and the gaps therein, the potential for Farm Mechanisation is assessed as under:

(₹ lakh)

Sr. No.	Activity	Unit	UC	2018-19		
				Phy. Units	Fin. outlay	Bank loan
1	Tractor ( 40-45 HP) with trolley (3 MT-mechanically operated)	No.	6.75	100	675.00	506.25
2	Power tillers (8 HP and above)	No.	1.55	305	472.75	354.56

Sr. No.	Activity	Unit	UC	2018-19		
				Phy. Units	Fin. outlay	Bank loan
3	Paddy transplanters -4 wheel self propelled	No.	11.00	4	44.00	33.00
4	Paddy transplanters- manual	No.	2.50	17	42.50	31.88
5	Combine harvesters	No.	24.00	10	240.00	180.00
6	Agri. Implement –sprayers	No.	0.05	325	16.25	12.19
7	Agri. implements –weeder	No.	0.40	320	128.00	96.00
8	Agri. implements -motorised threshers	No.	0.40	317	126.80	95.10
9	Agri. implements –others	No.	0.95	1300	1235.00	926.25
<b>Total</b>					<b>2980.30</b>	<b>2235.23</b>

The average bank loan has been taken @ 75% of TFO. The details of block-wise & activity-wise projections are given in **Annexure I**. Since more than 50% of area is operated by small and marginal farmers, more credit is expected to be availed by Small and Marginal Farmers.

#### **3.1.3.4. Availability/Gaps in infrastructure and support services:**

- 1) Farmers belonging to SC/ST category, 90% subsidy is provided 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% subsidies provided for implements and tools.
- 2) The Govt. provides 50% subsidy on custom hiring for tillage operations in Paddy, Pulses, Groundnut and Sugarcane. For Harvester purchase, subsidy is provided only to farmers 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.

#### **3.1.3.5. Suggested action points:**

- 1) Primary Agricultural Cooperative Societies may provide custom hire services to their members, who are mostly small farmers, to help them in getting the critical service, even as the Society would also be able to get additional source of income.
- 2) The factors limiting farm mechanization are 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) The following interventions are required for promotion of Farm Mechanization in the District:
  - a. Proper sensitization and training to promote farm mechanization is needed.
  - b. Provision for proper spares & servicing centers and on farm training to users.
  - c. Demonstrations for model mechanized plantations.
  - d. Subsidy schemes have to be credit linked with back-ended subsidy with appropriate lock-in period.
  - e. 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. Development of an efficient custom hiring centre would help

in farmers adopting mechanization without capital investments. Development of mechanized weeders would help in farmers cultivating paddy adopt SRI/DSR, as weed control is a major task in alternative paddy cultivation systems.

### 3.1.4. Plantation and Horticulture

#### 3.1.4.1. Introduction

- 1) Goa State falls in the climatic zone of the Coastal Hilly sub-region of the Western Plains & Ghats. The climatic conditions offer tremendous scope for high value plantation crops, fruits, vegetables, etc. Presently, some of the plantation and horticulture crops are being procured from neighbouring states due to high demand.
- 2) The major plantation and horticulture crops are cashew, mango, coconut, arecanut, oil palm and rubber which are grown in the district in small scale. A number of garden crops like banana, pineapple, sapota (chickoo), papaya and jackfruit are also grown. Around 54720 ha of area is under plantation and horticulture crops, including vegetables and garden crops, which is approximately 68% of the Gross Cropped Area of the district.
- 3) Medicinal & Aromatic plants have much scope in the district. However, due to high labour cost and inadequate marketing facilities it has not picked up.
- 4) The Godrej Oil Palm factory in the district procures oil palm from the producers. The area, yield and production of various plantation and horticultural crops for the past three years are given below :

(Area in ha)

Sr No	Crop	2014			2015			2016		
		Area under prodn	Avg. yield (kg/ha)	Prod. (MT)	Area under prodn	Avg. yield (kg/ha)	Prod. (MT)	Area under prodn	Avg. yield (kg/ha)	Prod. (MT)
1	Cashewnut	40712	435	17710	37355	446	16660	37603	437	16433
2	Arecanut	1468	1664	2443	480	1654	794	514	1746	897
3	Pepper	421	318	134	274	320	88	251	336	92
4	Tree Spices	59	29	2	51	30	2	62	57	4
5	Sugarcane	140	54666	7653	129	60910	7857	124	36943	4581
6	Mango	1431	1856	2656	977	1835	1793	1009	1996	2014
7	Banana	1253	11320	930	1253	11295	14153	965	11326	10930
8	Pineapple	192	16610	3189	110	16580	1824	114	16480	1879
9	Coconut *	11379	4977	566	8911	4955	442	8954	5046	451
10	Oil palm	336	2469	830	335	2460	824	322	2454	790
11	Other garden crops	2258	10690	24138	1650	10665	17597	1679	10546	17707
12	Vegetables	3829	11411	43693	3338	11408	38080	3349	23264	38856
<b>Total</b>		<b>63130</b>		<b>103944</b>	<b>63478</b>		<b>100114</b>	<b>54946</b>		<b>94634</b>

\*production in lakh nuts

- 5) As can be seen from the above, cashew is the major plantation crop, besides vegetables, followed by coconut. But the productivity of both the crops are lower than the national average and inconsistent. Most of the horticultural production is organic by default due to low use of chemical fertilizers and pesticides.
- 6) In Bardez and Sattari blocks, farmers live in houses surrounded by at least 1000 to 2000 sqm of land where coconut and fruits trees are grown. Homestead farming is practised but not in a systematic manner.
- 7) Subsidy assistance at 75% is available for coconut, banana, pineapple, papaya, spices cultivation is provided by State Govt. For protected cultivation 100% cost is reimbursed by Govt. (50% under NHM and 50% under State scheme) and 50% subsidy over and above is provided for the planting material.

- 8) Support price scheme: Govt. provides assured price for cashew-₹ 90/kg, arecanut at ₹ 170/kg, coconut-₹ 8/ nut and oil palm-₹ 9000/tonne. The difference in price paid by the dealer to farmer and assured price is paid as support price to the farmers.

### 3.1.4.2. Credit flow in the past 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:

Cashew rejuvenation and replanting, hybrid coconut cultivation and spices are potential activities that could increase farmers income due to assured price scheme and high market rates. Polyhouse for flowers and vegetables cultivation is being promoted by the State Govt. Oyster mushroom cultivation has potential, which would fetch supplementary income for small and marginal farmers. As raw cashew prices have increased to ₹ 100/kg, more of cashew plantations are likely to be established. Taking into account the available and planned infrastructure and the gaps therein, the potential for Plantation & Horticulture is assessed as under.

(₹ lakh)

Sr. No.	Activity	Unit size	2018-19			
			UC	Phy. Units	Fin. outlay	Bank loan
1	Cashew	Ha	1.23	1050	1291.50	968.63
2	Cashew rejuvenation	Ha	0.40	1275	510	382.50
3	Coconut	Ha	2.00	525	1050	787.50
4	Coconut – Hybrid	Ha	2.50	165	412.50	309.38
5	Mango	Ha	2.00	280	560	420.00
6	Oilpalm	Ha	1.00	105	105	78.75
7	Arecanut	Ha	2.70	140	378	283.50
8	Spices (pepper as a mixed crop in arecanut)	Ha	1.05	315	330.75	248.06
9	Spices- nutmeg (sole crop)	No.	0.90	140	126.00	94.50
10	Polyhouse Vegetables -1000 sqm	No.	11.00	15	165	123.75
11	Vegetables (shadenet)-1000sqm	No.	4.00	36	144	108.00
12	Polyhouse (gerbera)-1000sqm	No.	8.50	17	144.5	108.38
13	Others (kokum, cocoa & other innovative activities)	No.	3.00	135	405	303.75
14	Nursery-PH planting material/ ornamental	No.	3.25	42	136.50	102.38
15	Oyster mushroom	No.	2.10	15	31.50	23.63
16	Homestead farming -1000sqm	No.	0.50	172	86	64.50
<b>Total</b>				<b>4427</b>	<b>5876.25</b>	<b>4407.19</b>

The blockwise projections are given in Annexure I.

### 3.1.4.4. Availability/Gaps in infrastructure and support services:

Mission for Integrated Development of Horticulture (MIDH) and State Govt. support are clubbed to subsidize the 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 flowers and loose flowers. During the current year, 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 the structure is available for cultivation of Vegetables in Polyhouses / Shade Nets. Further the GSHCL procures the notified vegetables at pre-fixed rates assuring income to the farmers. A kitchen garden scheme is also being planned to be implemented 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 sourced by farmers from the two Govt. run farms at Kalay and Margao, Goa Bagayatdar and from 112 registered private nurseries.

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 a tremendous 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 two minor 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 a exposure visit to Kudal in Maharashtra State to have a firsthand experience of the processing facilities and equipments required. Innovative products like Jaffee (Jackfruit Coffee), Raw Vegetable and frozen jackfruit, are being produced commercially in other Southern States like Kerala and Karnataka and Kokum concentrate also has good scope for production and marketing. ATMA North Goa has done a study and also conducted exhibitions on various byproducts of Jackfruit and is marketed in outlets in North India, where they are a delicacy and in demand.

#### **3.1.4.5. Suggested action points:**

- 1) Jackfruit has huge potential in terms of value addition.
- 2) ATMA may expedite promoting FPO of farmers for processing agricultural produce especially Jackfruit and Kokum.
- 3) Department may support to local nurseries for production of quality planting material as also set up block level mini cold storages. May also attempt for primary processing branding and marketing of the horticultural produce. Support price should also be considered for flowers produced in the State.
- 4) Department may facilitate organic certification for the horticultural produce.
- 5) Use of quality seeds and soil health will improve the yield of the crops and also raise in income.
- 6) There is an urgent need for food processing unit in the district. Establishment of scientific and hygienic food processing unit for jackfruit, kokum, coconut, cashew, mango, banana will definitely double the farmers income and also reduce post harvest losses of horticulture crops.
- 7) Though there is one Govt. run storage godown at Panaji of Goa State Horticulture Development Corporation (GSHDC) and two in private sector (Pernem and Mapusa), the infrastructure is insufficient. A network of mini cold storages / cold chain unit for locally grown vegetables & fruits is required at block level.
- 8) Goa Bhagayatdar Co-operative Society assists farmers in marketing of horticulture produce like cashew, coconut and arecanut. Vegetable procurement is done through collection centres of the GSHD Corporation, however, village level/mobile procurement is the need of the hour.
- 9) Proper market survey need to be done by GSHDC for assessing the requirement of fruits and vegetables.

- 10) Farmers may be encouraged to cultivate the vegetables in the State to reduce over dependence on neighbouring states. A study may be carried out on the viability of the poly houses already supported by State Govt. for appropriate measures to revive them.

#### **3.1.4.6. Potential for increasing farmers' income:**

- 1) As envisaged in doubling of farmers' income by 2022, "per drop more crop" must be given thrust in all plantation and horticulture crops. Intercropping helps in optimum use of land and also provides additional income to farmers. Further, crop yields of other crops helps in judicious use of farm labour, more over farmers interest can be sustained in farm activity. Stable labour helps in maintaining the labour cost.

The coconut palm has been declared as the state tree. Coconut trees lend a distinct scenic flavor to Goa's landscape. Increasing urbanization has affected coconut cultivation, shrinking the area under the crop. The production during the year 2016-17 was 132.16 million nuts for the entire state for an area of 25913 ha. There is a marginal increase of production compared to the previous year 2015-16 with production of 129.35 million nuts. There is potential for value added products of coconut, viz. virgin coir products, coconut oil extraction units, coconut milk powder, coir pith etc.

### **3.1.5. Forestry and Wasteland Development**

#### **3.1.5.1. Introduction**

The Goa forests form part of Western Ghats and has been internationally recognized as Biodiversity Hotspot of the world owing to its rich flora and fauna. Most of the Goan forests are located in the eastern region of the state. From moist mixed deciduous forests to sub-tropical hill forests, from semi-evergreen forests to evergreen forests-the forests are the life supporting systems of the state as they are the store house of precious rivers & other natural resources.

Forestry and wasteland development have a good potential to provide livelihood for the tribal people residing in the periphery of forests. It also offers scope for developing new avenues like hinter land tourism, nature trails, trekking etc.

- 1) Out of the total geographical area of 3702 sq. km of the State, about 1224.26 is covered by government forest and 200 sq.km by private forests. As per the latest State Forest Report of Forest Survey of India, 53.17% (92300 ha) of the geographical area of North Goa (incl. ponda block) is assessed under forest cover, predominantly in Sattari, Bardez and Bicholim blocks.
- 2) The primary forest species in the district are teak, eucalyptus, bamboo, casuarina, and plantation crops like cashew, rubber, etc., planted by the Govt. Timber/wood based produce originate from private forests.
- 3) Goa Forest Development Corporation manages (GFDC) 4031 ha of cashew plantations at Morelme, Sattari in forest lands. The right to collect cashew is auctioned to individuals annually and to SHGs for five year period.

#### **3.1.5.2. Credit flow in the past three years:**

The credit flow to this sector is not significant due to lack of awareness, issues relating to the assessment of private forests and forest regulation in cutting trees for commercial purposes.

#### **3.1.5.3. Assessment of Credit Potential for 2018-19:**

As per the Wasteland Atlas of India, the total wasteland in the district is 27300 ha constituting 15.76% of the total geographical area (incl. Ponda). More than 50% of the wastelands are classified as land under open and dense scrub. 10% of the area is classified as underutilized degraded forest. These are open for exploitation by way of development of commercial forestry plantations, along with barren *comunidade* lands and lands categorized as private forests.

Taking into account the available and planned infrastructure and the gaps therein, the potential for Forestry & Wasteland Development is assessed as follows:

(₹ lakh)

Sr.No.	Activity	Unit size	2018-19			
			UC	Phy. Units	Fin. outlay	Bank loan
1	Teak	Ha.	0.70	64	44.80	33.60
2	Bamboo	Ha.	0.80	60	48.00	36.00
<b>Total</b>					<b>92.80</b>	<b>69.60</b>

The details of block-wise and activity-wise projections are given in Annexure I.

#### 3.1.5.4. Availability/Gaps in infrastructure and support services:

- 1) The primary forest species that could be promoted commercially in the district are Teak and Bamboo. There are nurseries in the district supplying seedlings to individuals and Corporations for planting and most of them are situated in Sattari and Pernem blocks. The supply from the nurseries is adequate for afforestation, gap filling in forests, etc.
- 2) Centrally sponsored schemes such as National Afforestation Programme through Forest Development Agency (NAP-FDA), Conservation and Management of Mangroves, Development of Tree Borne Oil Seeds Programme (NOVOD), Greening India Scheme, National Bamboo Mission, National Mission on Bamboo Application (NMBA), National Bio - fuel Policy etc. aim at covering more area under green vegetation.
- 3) The Forest Department implements developmental programmes like rehabilitation of degraded forests, afforestation of denuded lands under Govt./private/community ownerships, maintenance of nurseries, soil conservation measures, promotion of medicinal plants, etc.
- 4) Under National Bamboo Mission, a Bamboo Mission Society has been formed and two nurseries have been established. A Bamboo Development Centre and a Bamboo Demonstration Centre have also been planned by the Govt.
- 5) Felling of trees is banned in Govt. forests. Only the damaged or uprooted trees salvaged could be sold. As for the private forests, tree felling is controlled by the Goa Tree Preservation Act and permission has to be obtained from the Department. Further, transport licensing has to be obtained for transporting the produce within Goa as well as outside the State. All the Government produce is sold by way of auctioning. There is no established market for forest timber/wood based produce in the State.
- 6) The effects of climate change is 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:

- 1) To promote people's participation, Cashew Management Committees have been formed by GFDC. These committees have to be activated for a time bound rejuvenation of senile plantations, replacement with grafts, etc.
- 2) GFDC and Agri Department have attempted introduction of bee keeping activity. Based on the experience gained, apiaries could be established in areas adjoining forests which could provide honey based supplementary income for farmers living along the forest boundaries, which is by default organic.
- 3) There is scope for eco-tourism in collaboration with tourism department and forestry department.
- 4) In the wake of widening of roads, a huge number of trees have been felled. Planting of trees / saplings is not given importance. Social forestry should be given adequate importance, so that the tree cover in various urban and semi urban places can be improved.

- 5) There is general lack of awareness about the economics / bankability of agro-forestry/ farm forestry schemes among the farmers/ bankers, who need to be sensitized.
- 6) The Bamboo Mission Cell has to be activated to promote bamboo cultivation and value addition. The existing production could be used for value addition to increase the returns. In association with Konkani Bamboo and Cane Development Centre situated in Sindhudurg, skill and design development for Bamboo products could be attempted.
- 7) To promote private forestry plantations, commercial forestry nurseries need to be established.
- 8) Development of mangrove areas for crab cultivation offers good scope. Coordination between forest and fisheries department is essential.
- 9) Wastelands and Forest lands may be utilized for cultivation of green fodder. Green fodder production as intercrop in existing plantations need to be promoted.

### 3.1.5.6. Potential for increasing farmers' income:

Farmers have to design their farming activities in such a way that there would be income flows at different periodicities, such as daily income from selling of milk, lemon, drumsticks, etc., periodical seasonal income from vegetables and field crops, annual seasonal income from fruit bearing trees and substantial income over long terms from trees like teak wood or sandal wood. Forestry species provide opportunity for farmers to invest over long terms for reaping substantial incomes. Integrated farming systems with income flows at different periodicities need to be promoted among farmers.

## 3.1.6. Animal Husbandry – Dairy

### 3.1.6.1. Introduction

Animal Husbandry Sector plays a major role in improving the economic growth of the State and the Country. The total demand of milk in the State is around 3.30 lakh litres per day, while the estimated production is 1.61 lakh litres per day. Accordingly, there is a shortage of 1.69 lakh litres per day and the same is met by importing from neighbouring states. The milk procurement by Goa Dairy per day is 64000 litres and supply from outside states per day is 18618 litres. Procurement per day by SUMUL is 2654 litres. During the year 2016-17, 1395 animals were added and the cumulative animal population under Kamdhenu is 9249.

The department provides veterinary health care and other services for improving the genetic potentialities of cattle in the State. Apart from this, various beneficiary oriented schemes are also being implemented for the economic upliftment and welfare of the poor, downtrodden and weaker sections of the society. Activities such as rearing of Cross Bred cows, buffaloes and calf rearing has high commercial potential in the district, besides providing subsidiary occupation to the farmers.

There is no specific descript breed of cattle/buffalo in the district. As per the livestock census 2012, the total livestock population of the district is 2,90,901 of which the bovine population is 48,995, details are as under:

Particulars	Cows		
	Male	Female	Total
Cross bred cattle	858	8706	9564
Indigenous cattle	6845	13613	20458
Buffalo	3967	15006	18973

During the year 2016-17, 1377 animals under Kamdhenu scheme were purchased and an amount of ₹ 7.52 crore has been released as subsidy. An amount of ₹ 30.44 crores has been paid as milk incentives to the farmers.

No of animals (grades based on number of animals)	Subsidy –Category-wise			
	General		SC/ST/Dhangar	
	Amount	%	Amount (₹)	%
1 to 5 (Grade A)	45000	75	54000	90
6 to 10 (Grade B)	37500	62.5	54000	90
11 to 20 (Grade C)	30000	50	45000	75
21 & above (Grade D)	24000	40	37500	50

The Dairy Entrepreneurship Development scheme with a 25% / 33.33% subsidy for dairy activities has not been found attractive due to comparatively low subsidy rates.

### 3.1.6.2. Credit flow in the past three years:

Credit flow 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:

The subsidy under Kamadhenu scheme, assured milk procurement and milk incentives has turned dairying an attractive activity. Taking into account the available, planned infrastructure and the gaps therein, the potential for Dairy sector is assessed as under:

(₹ lakh)

Sr. No.	Activity	Units	2018-19		
			Phy. Units	Fin. outlay	Bank loan
1	CB Cows ( 1+1)	No.	1.75	4322.50	3241.88
2	Graded Buffaloes (1+1)	No.	1.75	1338.75	1004.06
3	Calf rearing (10 animal unit)	No.	3.00	1380.00	1035.00
4	Mini Dairy (10 animals)	No.	8.00	2480.00	1860.00
5	Community dairy	No	100.0	500.00	375.00
6	Others (shed repairs, fodder	No.	0.50	240.00	180.00
<b>Total</b>				<b>10261.25</b>	<b>7695.94</b>

The details of block-wise & activity-wise projections are given in Annexure I.

### 3.1.6.4. Availability/Gaps in infrastructure and support services:

- 1) Under Gol sponsored Dairy Entrepreneurship Development Scheme, extended up to 30.9.2017 and likely to be extended beyond, subsidy is available to SC/ST category entrepreneurs at 33.33% of the unit cost, within a ceiling of ₹ 40,000 for 2-animal unit and ₹ 2.00 lakh for 10-animal unit. The subsidy for general category is 25%.
- 2) State Govt. is implementing 9 schemes for dairy development, viz., Sudharit Kamdhenu Scheme, Revised modern dairy scheme, Scheme for cattle feed subsidy, Scheme for incentives to milk producers, Pashupalan scheme, Green fodder scheme, Dairy equipment Scheme, Infrastructure development Scheme, Community Dairy scheme and Dairy kits Scheme.
- 3) The Goa Dairy, a federal body of milk cooperative societies, has 87 Societies affiliated to it in North Goa and 09 milk routes for collection. SUMUL, a cooperative body from Gujarat, has recently been given permission to procure milk from the District.
- 4) The Kamdhenu scheme introduced in 2013 has received good response from farmers. The cumulative animals under the scheme is 9249 as on 31 March 2017. Under Kamdhenu scheme, 40% to 90% subsidy is available for purchase of animals. The scheme was modified in June 2015, whereby the unit cost was increased, as detailed below, along with insurance premium of max. ₹ 6000 and transportation cost of max. ₹ 1500. After scheme modification, farmers who already have atleast 10 animals and desirous to purchase additional of minimum 10 animals can purchase from outside the State too, after complying with other terms and conditions stipulated in the scheme.
- 5) Under the green fodder scheme of the state govt. subsidy for cultivation of green fodder in perennial areas is presently ₹ 30000/-, ₹ 20000/- and ₹ 15000/- for 1st, 2nd and 3rd year

respectively. Incentives for irrigation for perennial fodder cultivation varies from ₹ 5500/- to ₹ 80000/- for 500 sq.mt to 10,000 sq.mt and above.

- 6) The AH&VS Dept. provides financial assistance for establishment of modern dairy farmer and purchase of dairy farm equipment to enhance productivity, profitability, stability and sustainability and to reach self sufficiency in milk production. 30% of the cost of plant and machinery will be granted as subsidy subject to a maximum of ₹ 4.50 lakh to any individual for setting up of a new Dairy farm, expansion of existing dairy unit, and purchase of modern dairy equipment for existing dairy units and renovation of existing cattle shed. For Milking Machine subsidy is @ 30% of the cost of the Milking Machine.
- 7) State Govt. should take immediate measures to revamp the operation of Goa Dairy and also its feed unit so that the farmers are benefitted.

#### **3.1.6.5. Suggested action points:**

- 1) The command area of major irrigation projects can be effectively used for green fodder production.
- 2) Using wasteland for green and dry fodder will enhance the production.
- 3) Branch Managers to be sensitized about various components of DEDS that can be supported outside State schemes.
- 4) Convergence with Dairy Cooperative Societies as also the Village/Block Level Federations of SHGs promoted under GSRLM will help in promoting the sector on a cluster basis.

#### **3.1.6.6. Potential for increasing farmers' income:**

- 1) Rearing of milch animals as an ancillary activity helps farmers in not only increasing their income, but also helps in organic farming being pursued with many farmers. Farmers can leverage subsidy available for these investments under both central and State schemes. Value addition to milk can generate employment for the family members of the farmers, providing additional source of income.

### **3.1.7. Animal Husbandry – Poultry**

#### **3.1.7.1. Introduction**

- 1) Eggs and poultry meat are important sources of high quality protein to balance the diet of common people. Poultry farming provides a source of income and gainful employment to farmers throughout the year. Poultry manure has high fertilizer value and can be used for increasing yield of crops.
- 2) With an annual turnover of about ₹ 30,000 crore, India's poultry sector is one of the largest in the world. India is one of the top ten countries producing broilers and fifth largest egg producer in the world. Broiler poultry is growing over 15% and layer poultry at 10%. Though poultry development in the country has taken a quantum leap in the last three decades, the growth has been mainly restricted to commercial poultry. Rural backyard poultry, though still contributing nearly 30% to the national egg production, is the most neglected one. This is in spite of the fact that its eggs and meat fetch a much higher price than that from commercial poultry.
- 3) Goa being a tourist state, there is lot of demand for poultry products such as poultry eggs and meat. The demand for poultry products is 1.5 lakh broilers per week and only one third of it is met by local production. The per capita poultry consumption in Goa is 3 Kg of meat and 80 eggs per annum, offering potential for poultry in Goa. 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.
- 4) As per Livestock Census, 2012, there are 2,92,000 poultry birds (including backyard poultry, poultry farm birds, ducks, turkey, etc.), of which 1,86,982 poultry birds are in North Goa.
- 5) The major poultry units located are in Bardez, Tiswadi and Sattari Blocks. The numbers have been going down as local units are unable to compete with pricing of birds brought from neighboring States mainly due to high cost of feed, labour, unfavourable climate.

- 6) Back yard poultry is slowly getting a presence in the State as a household activity as both meat and eggs have local preference and fetch better sale price.

### 3.1.7.2. Credit flow in the past 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:

There are only 808 households involved in poultry rearing and 9 private poultry farms available in the district. Certainly, there is huge scope for poultry activity. Farmers are interested in taking advantage of higher retail prices by undertaking direct marketing. Taking into account the available and planned infrastructure and the gaps therein, the potential for Poultry Development is assessed as follows:

(₹ lakh)

Sr. No.	Activity	Unit	2018-19			
			UC	Phy. Units	Fin. outlay	Bank loan
1	Layer units- 2000 birds	No.	8.00	36	288.00	216.00
2	Broiler units - 1000 birds	No.	2.40	80	192.00	144.00
3	Rural Backyard Poultry units-100 birds	No.	0.30	390	117.00	87.75
4	Open cage transport vehicle	No.	8.00	11	88.00	66.00
5	Egg / broiler cart	No.	0.10	40	4.00	3.00
6	Misc – (incl hatchery and feed	No.	24.00	5	120.00	90.00
<b>Total</b>					<b>809.00</b>	<b>606.75</b>

The details of block-wise and activity-wise projections are given in **Annexure I**.

### 3.1.7.4. Availability/Gaps in infrastructure and support services:

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 made 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 diseases. Purchasing feed from outside the State increases production costs and reduces the poultry farmers' market competitiveness. The Supreme Court is presently hearing a petition urging it to impose a ban on keeping poultry animals in suffocating cages.

### 3.1.7.5. Suggested action points:

- 1) Poultry as a specialized activity can help enterprising farmers to create alternate/additional source of income.
- 2) Small and Marginal Farmers can take up backyard poultry as a supplementary livelihood activity. Women members of SHGs in clusters can take up backyard poultry in an organized manner with appropriate backward and forward linkages. This contributes to the overall family income.
- 3) Capacity building of beneficiaries for rearing of commercial poultry birds.
- 4) Encourage setting up of local feed mixing units can ensure availability of cheaper feed.
- 5) Ensuring availability of Day Old Chicks (DOCs) - setting up of a hatchery in the District.
- 6) Poultry business is risky – Credit Guarantee Fund / Insurance could be considered.
- 7) Automated poultry dressing units can be set up / marketing of value added products.

### 3.1.7.6. Potential for increasing of farmers' income:

The poultry is a very good supplementary activity for farmers and since there is huge demand in the State / District, this activity offers scope for additional income for the farmers.

Backyard poultry can be taken as a viable activity by SHGs. The department can assist in capacity building and help the SHGs for credit linking with banks and since the recovery percentage of SHGs is more than 97%, the bankers can provide credit without much hassle.

Local birds and their eggs fetch double the price than the commercial variety of poultry. A shift from commercial poultry to backyard poultry farming is likely, as animal welfare activists have challenged the caged farming concept on ethical grounds and sheer cruelty to animals.

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.

The retail poultry market is well established due to heavy demand from both locals as well as tourists. Value addition in terms of developed hi-tech and environmentally safe automated poultry dressing units and branding will yield higher income.

Poultry manure has high fertilizer value and can be used for increasing yield of crops, providing additional income for the farmers taking up poultry.

### 3.1.8. Animal Husbandry – Sheep, Goat and Piggery

#### 3.1.8.1. Introduction

Sheep and goats are important livestock species of India. They contribute greatly to the agrarian economy. They play an important role in the livelihood of a large percentage of small and marginal farmers and landless labourers engaged in sheep and goat rearing. Sheep and goats in India are mostly maintained on natural vegetation on common grazing lands, wastelands and uncultivated (fallow) lands, stubbles of cultivated crops and top feeds. Sheep and Goat rearing is taken up mainly by landless agricultural labourers, both as primary and supplementary activity.

The Goa state has demand for meat of sheep, goat and pig by locals as well as tourists. However, there is imbalance in the local demand and supply.

The Livestock Census, 2012, indicates that there are about 5871 goats, 1280 cross bred pigs and 17779 indigenous pigs in the district. Pig rearing units could be seen only in Bardez taluk as traditional household activity.

During the year 2016-17, under the pig rearing scheme, 135 piglet were supported to the tune of ₹ 1.58 lakh.

#### 3.1.8.2. Credit flow in the past three years:

Credit flow data, exclusively on AH – Sheep, Goat & Piggery is not available for want of appropriate codes in LBR.

#### 3.1.8.3. Assessment of Credit Potential for 2018-19 :

Taking into account the available and planned infrastructure and the gaps therein, the potential for SGP Development is assessed as follows:

(₹ lakh)

Sr. No.	Activity	Unit	2018-19			
			UC	Phy. Units	Fin. outlay	Bank loan
1	Pig rearing (3+1 unit)	No.	3.20	50	160.00	120.00
2	Goat Rearing (25+1 unit)	No.	1.70	75	127.50	95.63
3	Misc (Shed repair, extn,	No.	0.25	60	15.00	70.00
<b>Total</b>					<b>302.50</b>	<b>226.88</b>

The details of block-wise and activity-wise projections are given in **Annexure I**.

#### **3.1.8.4. Availability/Gaps in infrastructure and support services:**

The State Govt. subsidy scheme on 'Development of Piggery' provides 25% subsidy for setting up piggery units (20+2 unit). Construction of shed to accommodate animals, bio-gas, utensils and sausage making machine are also included in the Scheme. State Govt. is also contemplating a separate scheme for Goat rearing.

Meat processing in the district is limited to processing of pork into sausages, which have a demand among locals.

There is no breeding unit for pigs or goats in North Goa. Farmers need to be sensitized on the commercial rearing of pig and goat. KVK, North Goa, has recently set up a demo unit for goat rearing.

The demand of meat is met from across the state in dressed and frozen form.

North Goa does not have slaughter house and animals are sent to the Goa Meat Complex at Usgaon, Ponda in South Goa. This unit need to be modernized for slaughtering small animals too. Appropriate policy changes are required for setting up block level private slaughter units. One of the major problems encountered by piggery farmers is the difficulty in obtaining No Objection Certificates (NOC) from the Panchayats and Health Dept.

#### **3.1.8.5. Suggested action points:**

- 1) Creating awareness among unemployed and interested beneficiaries about the subsidy scheme and the demand in this sector will certainly help them in becoming a successful entrepreneur.
- 2) Marketing of live animals as well as meat is controlled by traders/middlemen who decide the live weight of animals on an approximate basis. Therefore, improvement in market linkages for live animals as well as meat may be addressed so as to ensure fair and remunerative prices, especially to small farmers.
- 3) Due to the increasing demand for sheep and goat meat, registered slaughter houses and modernized of slaughter houses giving importance to hygienic meat, better utilization of by products and better returns from meat production.
- 4) Promotion of stall fed Sheep / Goat rearing.

#### **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. Stall fed units for Goats / Sheep are being popularized by ICAR and can be promoted in Goa. The activity is especially appropriate in the mountainous areas of Goa where crop and / or dairy farming cannot be taken up. They also provide easy liquidity to the farmers.

### **3.1.9. Fisheries**

#### **3.1.9.1. Introduction:**

The State of Goa is blessed with marine, inland and brackish water resources. Fishing is one of the major economic livelihood in the State and fish is the staple diet of a major section of the population of Goa. Total fish catch during 2015-16 was 1,11,911 MT which was about 5% less than the previous financial year. Of this, marine catch was 1,07,069 MT and inland fish catch is 4,842 MT. Although potential fishing grounds are located off the coast of Pernem, Bardez, Tiswadi, Marmugao, Salcete and Canacona about 75% of the fish landings are from Mormugao, Salcete and Bardez.

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.

**Marine Resources:** The coast line of Goa is stretching to 104 km and 40% of the coastline is in North Goa. The continental shelf is 10,000 sq km in area. There are three fishing taluks in the district viz., Tiswadi, Bardez and Pernem.

**Fishermen Population:** The total fishermen population of Goa is about 30,225 (Marine Fisheries Census of CMFRI, 2010) of which 36 % are located in North Goa. The active fisher folks in Goa are estimated to be 2370 with 775 located in North Goa and 1481 are engaged in fish marketing, majority being women.

North Goa accounts for 40% of the marine catch. Prominent and most important pelagic fishes of local commercial value are oil sardines and mackerel with 52901 Tonnes and 11432 Tonnes respectively. Prominent and most important demersal catches of export value - *penaeid* shrimps, tunnies, seer fish, catfish, shark and carangids. On an average, pelagic resources constitute more than 50% of the total landing. Exports consist of about 15% of total fish caught.

### Inland Fisheries

The State has 3300 Ha of water spread area of fresh water bodies covering Salaulim reservoir in South Goa and Anjunem Dam reservoir in North Goa

### Subsidy assistance

- 1) The Department of Fisheries provides subsidy benefits for construction of fishing crafts, purchase of outboard motors, HSD oil, kerosene for OBM, insulated boxes, fishing requisites, purchase of life jackets and life buoys. Subsidy is also available for fresh water fish farm and purchase of seed and feed.
- 2) New subsidy schemes have been commenced by the Dept. of fisheries for promoting mussel, mud crab and ornamental fish rearing.

**3.1.9.2. Credit flow in the past three years :** The credit flow in the district during 2013-14 was ₹ 134.16 lakh, ₹ 423.08 lakh and ₹ 435.42 lakh during 2014-15 and 2015-16 respectively.

Commercial banks in the State finance 98% of the fisheries projects and the share of the Goa State Cooperative bank is very negligible which is less than 2%. There are no RRBs in State.

### 3.1.9.3. Assessment of Credit Potential for 2018-19:

Due to pressure on existing resources, not much scope is expected in creation of fresh assets under marine fisheries. So, credit potential is assessed for maintenance of existing assets, mechanization / repair, etc., as detailed below. Activities like mussel, crab farming, ornamental fish rearing are expected to find presence with new subsidy schemes announced by the State Govt.

(₹ lakh)

Sr. No.	Activity	Unit size	2018-19			
			UC	Phy. Units	Fin. outlay	Bank loan
1	Wooden trawler replacement *	No.	53	17	901.00	675.75
2	Mechanization of canoes- Out Board Motors	No.	1.60	90	144.00	108.00
3	Fiber Boats (motorized)	No.	2.20	78	171.60	128.70
4	Repair & WC of vessels **				454.20	340.65
5	GPS, fish finder, search beacon	No.	1.50	190	285.00	213.75
6	Misc. (net purch, repair, head gear, etc.)				154.67	116.00
7	Fresh water fish culture/ha	No.	5.50	6	33.00	24.75
8	Ornamental fish rearing	No.	3.00	15	45.00	33.75
9	Mussel culture	No.	0.50	10	5.00	3.75
10	Mud crab culture	No.	7.50	6	45.00	33.75
11	Brackish water fish culture	No.	11.30	5	56.50	42.38
<b>Total</b>					<b>2294.97</b>	<b>1721.23</b>

\* (along with engine + power block). Activity-wise block-wise projections are available in Annexure I.

#### **3.1.9.4. Availability/Gaps in infrastructure and support services:**

**Fishing Infrastructure:** Two major, 4 medium and 9 minor landing jetties are in North Goa and the rest in South Goa. Fishing Jetties are available at Malim on Mandovi river, Chapora river, Cortalim in Zuari River in North Goa. Ramps and net mending facilities are also constructed for the benefit of traditional fishing crafts at various places.

In order to curb illegal activities in marine as well as inland water bodies the Department of Fisheries GoG has introduced a patrol vessel with State of Art technology.

As per the latest data available there are 1517 motorised canoes, 968 non motorised canoes and 1090 trawlers (771 operational) are operating in the Goan Coast. Bardez, Vasco and Tiswadi talukas account for over 1650 canoes. 80% of the traditional fishermen have canoes fitted with Out Board Motors. Traditional sector contributes around 26% of the catch.

The mechanized sector is in full operation from August to September, November to December and March to May. Purse seining is more intense in August and September. Almost 40% of the mechanized trawlers are equipped with GPS and fish finders. 25% of the mechanized fleet venture into off shore areas for 4-5 days. Online Registration facility is available for registering fishing vessels.

7721 registered fishing gears in Goa. Sea Gill net and Trawl net are the major gears used along the coast Stake net, cast net are also being used in the inland water bodies. One of the traditional fishing gear used in Goa is the beach seine, locally known as **Rampon** and is more prevalent during monsoon season. Rest of the seasons gill nets of varying mesh sizes are being used to catch target varieties.

**Mobile Fish Stall:** In order to supply fish at reasonable rates, the Department with NFDB assistance, has provided 5 mobile fish stalls which is being operated through SHGs/ Fisheries societies. The general public will be able to purchase fish at 5% above whole sale rates. In view of the success of this intervention the government contemplates to introduce 5 more stalls in the State.

**Coastal security and Safety of Fishermen:** A full-fledged Control room to inform the weather advisory and to monitor the fishing operations around Goan Coast is set up under the aegis of the Fisheries Department. Around 9181 cards have been issued.

**On line registration of fishing vessels:** In order to ensure that the vessels fishing in Goan waters are authorized, the Department registers all fishing vessels under Merchant Shipping Act (MS Act) and Registration certificates for both traditional and mechanized boats are being issued. It is mandatory to keep all documents on board.

**Corpus Fund:** A corpus fund created through contribution from Government of Goa and the fishermen contribute so that the interest generated by the contribution can be used for granting immediate relief in case of natural calamity.

In Goa, as Maximum Sustainable Yield level (MSY) estimated to be 85,407 Tonnes has been reached, fresh licenses are not issued for new trawlers. Only replacement of existing mechanized boats (trawlers) is permitted by the Govt. and purchase of fishing trawlers up to 36 feet in length and 7 feet in width only are encouraged. Traditional fishing vessels are being permitted up to 5 km from the shore.

#### **Marine Fisheries:**

- 1) Demonstration cum training programmes are organized at the fish farm of 5 ha at Old Goa, to impart training on adoption of new technology in prawn and fish farming to maximize productivity. The State Govt. has set up a diagnostic laboratory in collaboration with ICAR / NIO to ensure sustainable eco-friendly aquaculture under Brackish Water Development.
- 2) The Govt. has introduced subsidy for Power Blocks for trawlers to reduce labour dependency; at present, labour working on trawlers are sourced from Jharkhand and Bihar and any delay in arrival

of these labour on commencement of fishing season results in economic loss to trawler owners. Installation of such power blocks should be popularized.

- 3) Development of Chapora Cold Storage Complex may be taken up by the State Govt. which will provide basic infrastructure facilities to the fishermen.
- 4) Value addition of low value fish holds scope as presently, this resource is not being effectively utilised.

#### **Brackish Water Fisheries:**

- 1) The district has 2,000 ha marshy and khazan land suitable for shrimp farming within the provisions of the Brackish Water Fish Farming Regulation Act, 1991. Fish culture is done in *Khazan* lands between September to April in estuaries. Prawn larvae migrate into *Khazan* lands during monsoons, while the paddy is harvested in October, fish/prawn is allowed to grow upto April / May at the end of which, fish crop is harvested.
- 2) The mangroves that have covered erstwhile paddy fields due to poor maintenance along the backwater areas of Chodan, Mayem and Pilgao villages in Bicholim block have potential for economic utilization through crab farming. At present, wherever tenant associations are managing the land resources, the mangroves and adjoining khazan lands are utilized for shrimp farming.
- 3) Commercial shrimp farms are not popular as prawn seeds have to be transported from Tamil Nadu; there is no hatchery in the District.

#### **Fresh Water Fisheries:**

- 1) There are 25 Inland fish landing centres in the district in Bardez, Tiswadi and Ponda Blocks. There is good potential for fresh water fish/prawn culture in about 115 fresh water perennial and seasonal bodies with an area of 1,585 ha including Anjunem Reservoir and Mayem lake. A pilot fresh water fish farm is set up at Sattari. *Monosex tilapia* can be cultured in such areas.
- 2) Under National Mission for Protein Supplements, through RKVY, a project on Open Sea Cage Culture for culturing high value fish, viz., *Cobia* and *Lates* is proposed in North Goa. 25 cages are proposed to be installed in the sea waters in North Goa, 48 cages are proposed to be installed in various reservoirs and 50 cages are proposed to be installed in rivers.
- 3) There is a fresh water fish seed hatchery in Keri with a capacity of 1 million fry per annum. The hatchery reared seeds are used for stocking the common water bodies in the State. The Dept. of Fisheries stocks the tanks/ponds and leases them out to private people for rearing and harvesting.

#### **3.1.9.5. Suggested action points:**

- 1) There is an ice plant at Mali in Bardez block taken on lease by Societies. However, there are no cold chains, cold storages which need to be encouraged. The infrastructure facilities require urgent upgradation.
- 2) There is a need for having a uniform ban period across the entire western coast. There is also a demand for increasing the ban period to 75 days in consultation with neighbouring States, to sustain the fishery resources.
- 3) Training and awareness creation on HACCP standards, branding and packaging is required to exploit the full potential and reduce post-harvest losses.
- 4) Mussel, oyster and crab culture hold potential in saline backwaters and mangroves. North Goa has about 2000 ha of *Khazan* land (50 % of total *khazan* land in State) which could be utilized for this purpose.
- 5) State Govt. should consider promoting fresh water fisheries in all water bodies available in the District.
- 6) Value addition of low value fishes need to be encouraged in the State.
- 7) Formation of JLGs of fish vendors.

**3.1.9.6. Potential for increasing farmers' income:** Processing of low value fish, improving quality of preservation methods, and value addition of marine resources is essential if the fish

farmers/fishermen income needs to be increased. Storage facilities, diversification and adoption of latest technology in farming have to be implemented to help the fishermen in this direction.

NABARD has demonstrated 02 projects one each on Crab Culture and Mussel Culture under its Farm Sector Promotion Fund (FSPF). The study crab culture envisages to build capacity of the local community and other stakeholders for crab farming cultivation through exposure visit to successful farms and demonstration-based training. Development of mussel farming holds a lot of promise in the coastal areas of Goa. NABARD facilitated area specific capacity building programmes to inculcate an innovative technique of mussel culture. This involved less investment and manpower and has yielded promising returns.

In marine fishing areas, using ocean satellites called OceanSat3 and OceanSat3A can deliver better information enabling fishermen to search even smaller areas.

Inland fisheries can be enhanced through aquaculture methods like cage culture. Existing ponds and even new farm ponds can be put to use as an organized sector for inland fisheries through aquaculture.

*Xinnaneo* (Green Mussel) in demand. The xinnaneo are sedentary organisms unlike fish and if their habitat is destroyed they may take more time to resurface than fish. The demand for green mussels is good in the state. They are rich in protein and found in the rocky areas and they are also being harvested at Betul, Siridao, Baga, Morgim and Caisuva. The production of the xinnaneo varies in the state and the local supply depends upon the production in that particular season. Being a tourism destination and local consumption is also more, there is scope for production. After several years the banks of Tiracol river for the first time were covered with xinnaneo.

### 3.1.10. Farm Credit – others

#### 3.1.10.1. Introduction:

Other Allied Agricultural Activities comprise of bullocks, bullock-carts and other miscellaneous agricultural implements and vehicles for farm use and transportation; loans to distressed farmers for prepayment of non-institutional loans and loans to small and marginal farmers for purchase of land for agricultural purposes.

Despite the increase in mechanization of the agricultural operations of the district, the SF/MF depend on animal power to carry on their farm operations. While the tractors are mainly used in the irrigated belt where cash crops are grown, the bullocks and bullock carts are used in the unirrigated blocks of the district.

According to the livestock census 2012, there are 3582 animals used for draught purpose in the district. The costs involved in maintaining animals are forcing farmers to invest in mechanization and farm transport vehicles. Banks are financing various agriculture activities as miscellaneous activities by way of General Purpose Credit Card. Gold loans for agriculture purpose with repayment period of more than 12 months are also being shown under this head.

#### 3.1.10.2. Credit flow in the past three years:

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

#### 3.1.10.3. Assessment of Credit Potential for 2018-19:

Considering the available and planned infrastructure and the gaps therein, the potential of Other Activities is presented in the following table:

(₹ Lakh)

Sr. No.	Activity	Unit size	UC	2018-19		
				Phy Units	Fin. Outlay	Bank loan
1	Draught Animals	No.	0.75	68	51.00	38.25
2	Bullock Carts	No.	0.22	31	6.82	5.12
3	Farm Vehicles	No.	6.50	50	325.00	243.75

4	Loans to SF/MF for purchase of land for agricultural purposes	Acres	1.00	230	276.00	207.00
5	Other Agri Loans			0	6900.00	5175.00
	<b>Total</b>				<b>7558.82</b>	<b>5669.12</b>

Details of block-wise and activity-wise projections are given in **Annexure I**.

#### **3.1.10.4. Availability/Gaps in infrastructure and support services:**

The scope for bullocks, bullock-carts, miscellaneous agricultural implements is very limited with the technological advancements. However, as organic farming is in vogue by default, sustaining it depend on availability of organic manure.

#### **3.1.10.5. Suggested action points:**

As the average land holding size is only 1.65 ha, loans for purchase of land for agricultural purposes to small/marginal farmers helps in land consolidation and making agricultural operations viable. Hence, bankers should encourage small/marginal farmers to purchase land for agricultural purposes.

State Government may consider incentivizing small/marginal farmers purchasing land to increasing their holding size. Similarly, incentivizing small/marginal farmers selling their land to other small/marginal farmers would help them to use sale proceeds and incentives for investments in other livelihoods, easing dependence on farming.

#### **3.1.10.6. Potential for increasing farmers' income:**

Fragmented land holdings hinder in modernization / mechanization of agriculture. If farmers consolidate their lands, they can commercialize their farming activities and even try meaningful integrated farming aimed at income at different periodicities.

Small/Marginal Farmers should be part of FPOs so that they can access backward and forward linkages at reasonable rates as otherwise they are subjected to exploitation.

### **3.2. AGRICULTURE INFRASTRUCTURE**

The priority sector lending norms introduced by RBI has created a separate sub-sector for agriculture infrastructure to cover loans for storage facilities, cold storage chains, soil conservation, watershed development, plant tissue culture, agri-biotechnology, seed production, production of bio inputs, and vermi composting. For this purpose, an aggregate sanctioned limit of ₹ 100 crore per borrower from the banking system will apply for considering them as priority sector advances.

#### **3.2.1. Construction of Storage facilities**

##### **3.2.1.1. Introduction:**

- 1) The agriculture produce are perishable products and as such post-harvest losses has to be addressed by creating storage infrastructure facilities (warehouses, market yards, godowns and silos) including cold storage units/ cold storage chains designed to store agriculture produce/products, irrespective of their location.
- 2) As on 31 March 2016, there were five warehouses of total capacity 3650 MT under FCI in North Goa located at Panaji, Pernem, Bicholim, Valpoi and Mapusa. There are no reliable records on the private godowns, which are mostly used for storing raw cashew nuts for processing purpose, storing fertilizers, paddy for milling, coconut copra for oil extraction, etc.
- 3) The major agricultural commodities produced in the district are paddy, sugarcane, cashew nuts, coconuts, arecanut, mangoes, bananas, pineapples and vegetables. But, the production of agricultural commodities is lower than the demand and thus the major demand for storage facilities arises on account of the need to store the produce brought from Karnataka for consumption.
- 4) The APMC Act has been amended in 2010 to allow contract farming. The Goa Agricultural Produce Marketing Board has established 5 sub-markets at Ponda, Sanquelim, Mapusa, Valpoi and Pernem.

- 5) State Govt. provides 50% loan and 50% grant for construction of godown-cum-office building by registered cooperative societies.

### 3.2.1.2. Credit flow in the past three years:

Credit flow data, exclusively on construction of storage facilities is not available for want of appropriate codes in LBR.

### 3.2.1.3. Assessment of Credit Potential for 2018-19:

Taking into account the available and planned infrastructure and the gaps therein, the potential for Storage Godowns and Market yards is assessed as follows:

(₹ lakh)

Sr. No.	Activity	Unit	2018-19			
			UC	Phy. Units	Fin. outlay	Bank loan
1	Cold storages (1000 MTs)	No.	65	3	195.00	146.25
2	Market yards	No.	225	2	450.00	337.50
3	Godowns (100 MTs)	No.	4	5	20.00	15.00
4	Small milk chilling units(1000 lit)	No.	5.50	6	33.00	24.75
<b>Total</b>					<b>698.00</b>	<b>523.50</b>

The details of block-wise and activity-wise projections are given in Annexure I.

### 3.2.1.4. Availability/Gaps in infrastructure and support services:

- 1) There is a large scale private cold storage of 3600 MT capacity in Pernem, which takes care of dairy and agro products that are brought from Maharashtra.
- 2) State Govt. has 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. There is a need for upgradation of the infrastructure facilities in all the market yards. The market yards set up are quite old (established in the 70s and 80s) and have not been upgraded since.
- 3) The State Marketing Board has established 5 market yards. There is a plan to establish marketyard at Banastarim in Tiswadi block. Many of these market yards need renovation, strengthened with infrastructure facilities. There are six local rural mandis in the district in Bicholim, Valpoi, Sattari, Mapusa, Marcel and Calangute. Village haats could be developed in strategic places to enable direct marketing by farmers.
- 4) Connecting the farmers to the world for marketing / knowledge dissemination through technology, mobile app, etc. will help the farmers.
- 5) 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. The first phase of the project is in the completion stage. Digital payments through various modes – mobile Apps, Point of Sale (POS) machines will be made to the producers and traders.
- 6) APMC godowns needs to be renovated. Private godowns are owned by rice millers, cashew industries or oil millers for storing their raw materials. Lack of storage facilities at village level, forces the farmer to sell their produce without waiting for the remunerative market prices. FPOs can play a key role in creating infrastructure for storage and marketing.
- 7) Coconut (Copra), Arecanut and Cashew are the major agricultural products that are brought to the market yards/stored for marketing purpose. There is demand for cold storage facilities at the taluka level for storing the Fruits and Vegetables for a short period to enable them reach markets in a streamlined fashion. 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 chillies are also being exported through MPT and Dabolim Airport in the same taluka. Truck terminal, cold storage facilities, hazardous cargo facilities, workshops, container repairs etc. would be established.

- 8) Goa State Horticulture Corporation Ltd. (GHSC) intends to set up post-harvest infrastructure at Thivim in an area of approximately 10 acres, in order to provide better services.

### 3.2.1.5. Suggested action points:

- 1) 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.
- 2) In Goa, there is no private sector investment in the storage sector except in cashew, which is linked to processing industry. Many of the APMC godowns need to be renovated/rebuilt as per warehousing norms.
- 3) Create awareness about the pledge loans or Warehouse Receipts (WRs) among farmers.

### 3.2.1.6. Potential for increasing farmers' income:

Creation of infrastructure facilities like cold storages, warehouses, godowns will help the farmers in reducing post-harvest losses and timing the sale of their produce to get remunerative prices, as the market prices during harvest season would be low due to market glut. Storage infrastructure reduces distress sale and helps farmers in getting better margins. Once the Negotiable Warehouse Receipt system and eNAM is stabilized, the farmers' liquidity and access to wider markets would improve.

## 3.2.2. Land Development, Soil Conservation and Watershed Development

### 3.2.2.1. Introduction:

The production and productivity of agriculture depends on the land, soil and water resources. Soil is a crucial resource that requires urgent attention to address the various global challenges ahead. The soil health could contribute to the efforts for food security, hunger eradication climate change adaptation, poverty reduction and sustainable development. Land and water management are required to raise production and productivity of agriculture on a sustainable basis. Land development includes land levelling, bunding, drainage, water harvesting, soil and water conservation, soil fertility restoration, etc.

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. Thirty watershed projects were implemented by the Department of Agriculture. Majority of these projects were implemented in Pernem and Bicholim and Ponda blocks and covered a total area of 23637 ha.

**3.2.2.2. Credit flow in the past three years:** Credit flow data, exclusively on LD, Soil Conservation and Watershed Development – others category is not available for want of appropriate codes in LBR.

### 3.2.2.3. Assessment of Credit Potential for 2018-19:

Taking into account the infrastructure available, planned and gaps, the potential for Land Development is assessed as under:

(₹ lakh)

Sr. No.	Activity	Unit size	2018-19			
			UC	Phy. Units	Fin. outlay	Bank loan
1	Land levelling and OFD	Ha.	0.78	3300	2574	1930.50
2	Reclamation	Ha.	0.25	980	245	183.75
3	Water storage	No.	0.70	360	252	189.00
<b>Total</b>					<b>3071</b>	<b>2303.25</b>

The details of block-wise and activity-wise projections are given in Annexure-I.

#### **3.2.2.4. Availability/Gaps in infrastructure and support services:**

- 1) "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. Soil testing for NPK and micronutrients is done free of cost at Soil Testing Laboratories at Old Goa. ICAR has developed a web based portal for getting instant fertilizer recommendation based on soil test report.
- 2) Subsidy ranging from 50% to 75% is provided by State Govt. for repairs and maintenance of notified bunds, desilting and renovation of water bodies, purchase of soil conditioners, undertaking various land development works like land levelling, trenches, sunken bunds, construction of retaining wall, water storage structures, *jalkunds*, etc.
- 3) 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 three *Jalkund* per farmer.
- 4) The State Govt. has sanctioned a project for bund strengthening, desilting of ponds for protecting khazan lands under *Rashtriya Krishi Vikas Yojana (RKVY)*.
- 5) 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:**

- 1) Creation of farm level water storage structure in every farmer holding in rainfed areas would help in expanding area under second crop thereby improving cropping intensity. There is a possibility for attempting the same in atleast one taluk on pilot basis on an area development basis.
- 2) The soil conservation wing of Department of Agriculture need to draw a comprehensive plan for rain water conservation through land development activities in the plantation areas to improve productivity of crops like cashew.
- 3) Updation and computerization of land records of farmers.
- 4) 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.

#### **3.2.2.6. Potential for increasing farmers' income:**

Addressing the issue of land fragmentation and cultivating in a group mode will help in reducing labour cost and increase production and productivity which will inturn increase in income. Involvement of SHGs and JLGs in various agriculture activities can address the labour issues. Cashew and coconut productivity could be increased by application of organic inputs and soil water conservation measures. Soil health checking and taking ameliorative measures should be ensured for all farmers. This should be coupled with land development activities including creating appropriate drainage structures, soil reclamation, etc, for desired results and higher income levels.

### **3.2.3. Agriculture Infrastructure - Others**

#### **3.2.3.1. Introduction:**

Besides infrastructure such as storage facilities, market yards, soil conservation, watershed development, tools for efficient use of water, etc., other infrastructure such as tissue culture, seed

production, production of bio-inputs, vermi composting, etc., will help in enhancing farm production and productivity, besides promoting adoption of scientific farm practices. To sustain production levels and to minimize dependence on chemical inputs, it is imperative to promote production and usage of organic inputs, bio-fertilizers, bio-pesticides and practice improved agronomic methods and organic farming techniques.

- 1) Due to high cost of transport and labour there is insufficient usage of organic inputs such as farmyard manure, vermicompost. The use of chemical fertilisers is also low, rendering cultivation to be organic by default.
- 2) Goa Bhagayatdar is the only agency facilitating organic certification of cashew so that farmers could be given better procurement rates; however, the full economic potential of organic cashew is yet to be realised.
- 3) There is a private commercial biofertilizer production unit in the district, which was set up with subsidy support under NPOF. The unit produces VAM biofertilizer under Shubodhya brand marketed in Maharashtra and Karnataka and used mostly for vegetables, bengal gram, maize, paddy, banana and papaya.
- 4) The Capital Investment Subsidy Scheme for Commercial Production of Organic Inputs has not been taken advantage of mainly due to costs involved in aggregation of waste and transportation. State Govt. provides 75% to 90% subsidy on fencing, organic manure production, purchase of bio-pesticides, pheromone traps and lures.
- 5) GOI launched '*Paramparigat Krishi Vikas Yojana*' in 2015-16 to promote organic farming through farmer clusters with assistance of ₹ 20,000 per acre per farmer in three years. In Goa, 5 clusters are proposed to begin with, to facilitate organic certification; two such clusters are proposed in North Goa. This would provide more impetus to the proposed Born in Goa (BIG) concept.
- 6) Agriculture farms in Sattari, Bicholim and Pernem blocks suffer from wild animal damage to crops. State Govt. implements subsidy schemes for farm fencing including solar fencing; but, due to land title issues, farmers are unable to take full advantage of the subsidy scheme.

### 3.2.3.2. Credit flow in the past three years:

Credit flow data, exclusively on Agri infrastructure – others category is not available for want of appropriate codes in LBR.

### 3.2.3.3. Assessment of Credit Potential for 2018-19:

Considering the infrastructure available planned and gaps identified, the potential assessed for land development is as under.

Sr. No.	Activity	Unit size	2018-19		
			Phy. Units	Fin. outlay	Bank loan
1	Composting-vermi (150t/ann)	No.	3.20	54.40	40.80
2	Composting-NADEP (40 TPA)	No.	1.16	104.40	78.30
3	Biofertilizers	No.	40.50	81.00	60.75
4	Misc (fencing,etc)			293.33	220.00
	<b>Total</b>			<b>533.13</b>	<b>399.85</b>

(₹ lakh)

Activity-wise block-wise projections are available in Annexure I.

### 3.2.3.4. Availability/Gaps in infrastructure and support services:

- 1) State Govt. provides 75% to 90% subsidy on fencing, organic manure production and purchase of bio-pesticides, pheromone traps and lures.
- 2) There is a large scale biofertilizer unit in the district, but production of other organic inputs like compost and FYM are yet to be taken up on a large scale.

- 3) Schemes for community fencing to be introduced as wild animal menace is serious in farms adjoining hills and forests.

### 3.2.3.5. Suggested action points:

- 1) NPOF Scheme, subsidy assistance is available from NABARD. A grant based project 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 has been sanctioned by NABARD to ICAR.
- 2) Organic inputs, farm yard manure and vermicompost may be made available to improve soil quality and production.
- 3) Awareness creation on organic inputs and its advantages to be made. A fullfledged commercial bio-control lab to promote bio fertilizers and bio pesticides to facilitate organic cultivation.

### 3.2.3.6. Potential for increasing farmers' income:

Value addition, packaging, branding for organic produce will provide additional income. 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

Ancillary activities in agriculture are supporting activities undertaken to create conditions necessary for carrying out agriculture or to provide services that result in forward and backward linkages. As per the RBI guidelines, loans to Co-operative Societies of farmers, ACABCs, food and agro processing units, PACS and loans sanctioned to MFIs for on-lending to agriculture sector, are covered under ancillary activities. ATMA, North Goa has taken initiative in forming ACABCs as per the GoI Scheme implemented through NABARD.

### 3.3.1. Food and Agro Processing

#### 3.3.1.1. Introduction:

An aggregate sanctioned limit of ₹ 100 crore per borrower as loan for food and agro-processing can be provided under this activity. Working capital for both existing units as well as new units can also be covered under this portfolio.

Food and Agro Processing Units / Industries has a lot of scope in the country and in the State. This sector can be seen as **Sunrise Industry** in India, which is backed by a strong domestic demand. Changing lifestyles and food habits, rising export opportunities and integration to global market will boost this sector.

Production on one side, non availability of proper infrastructure viz, godowns, cold chains, etc. on the other side results in wastage of produce, which is a crime. To balance this food and agro processing units play an important role. India's agricultural production base is quite strong & wastage of agricultural produce is sizeable. Encouragement and development of this sector right from picking the produce till value addition and supply in domestic, inter state and across the globe through formation of FPOs will see a sea change in the coming years.

Goa being a small State with small holdings, production per farmer is not much and aggregation of the produce is required.

Sr. No.	Type of Crop	Area (ha) (2016)	Total production (2016)	Consumed / marketed in raw form	Produce available for processing
<b>Food-crops</b>					
1	Paddy	17554	73288 MT	Around 50% is sold in raw form and rest consumed	36644 MT
2	Other cereals & pulses	7724	6488 MT	Mostly self-consumed	

3	Groundnut	1898	4290 MT	Around 50% is sold in open market	2145 MT
<b>Horticulture crops</b>					
1	Cashew	37516	11630 MT	100% is sold for processing	11630MT
2	Arecanut	496	794 MT	100% sold to Goa Bhagayatdar	794 MT
3	Coconut	8925	447 lakh nuts	80% consumed locally /sold to Goa	89 lakh nuts.
4	Mango, banana and pineapple	2061	13842 MT	Around 90 % is consumed locally	1384 MT
7	Other fruits (Jackfruit & Kokkum)	1662	17750 MT	Consumed locally	-
8	Pepper and tree spices (nutmeg)	342	96 MT	100% sold to Goa Bhagayatdar	96 MT
9	Vegetables	3277	37384 MT	Consumed locally	-

### 3.3.1.2. Credit flow in the past three years:

As the present monitoring information system does not capture lending to food and agro processing, the data of credit flow is not available. Presently, this sector gets covered under MSME sector.

### 3.3.1.3. Assessment of Credit Potential for 2018-19:

Considering the infrastructure available planned and gaps identified, the potential assessed for food and agro processing for 2018-19, is as under.

(₹ lakh)

Sr. No.	Activity	Unit	UC	2018-19		
				Phy. Units	Fin. outlay	Bank loan
1	Rice Mills 4800 TPA (S- TL)	No.	76.00	2	152.00	114.00
2	Poha/murmura mills (M-TL)	No.	7.00	15	105.00	78.75
3	Flour mills -280TPA (M-TL)	No.	2.79	20	55.80	41.85
4	Bakery units-80TPA( M-TL)	No.	8.00	28	224.00	168.00
5	Coconut Oil mill (M-TL)	No.	20.00	20	400.00	300.00
6	Mango and other fruits proc.300MT/ann(S-TL)	No.	80.00	5	400.00	300.00
7	Kokum proc. 72TPA(M-TL)	No.	5.00	10	50.00	37.50
8	Cashew Proc. 50TPA(M-TL)	No.	8.00	22	176.00	132.00
9	Cashew Proc. 500 TPA(S-TL)	No.	162.0	2	324.00	243.00
10	Fish/milk/meat Proc. 200TPA (S-TL)	No.	90.00	5	450.00	337.50
<b>Total</b>					<b>2336.80</b>	<b>1752.60</b>

Details of block-wise, activity-wise projections are given in Annexure I.

### 3.3.1.4. Availability/Gaps in infrastructure and support services:

- 1) There is a huge scope for processing of Cashew, Coconut, Arecanut, Jackfruit, Mango, and Banana in the district. The local cashewnut is in demand in the country and also abroad. Cashew apple is processed into an alcoholic drink called Feni which has got a Geographical Indication (GI) registration and is unique to Goa.
- 2) Jackfruit, Kokkum and Mango are processed to a small extent. There is a good potential for processing these horticultural crops, which is available in abundance in the state. Milk is procured

by Goa Diary / SUMUL and processed into pasteurized milk and other milk products like ice-cream, dahi, shrikhand and paneer. Milk parlour can be another option for marketing of various milk products.

- 3) Of the 1806 units registered with DITC, 22 units are engaged in cashew processing / cashew kernels, 5 in marine processing, 5 in coconut processing, there are many units functioning as flour/oil mills, masala grinding, jam and pickle making, bakery, etc. In addition, there are many small scale aerated units in the district. While there is dearth for markets, the access to markets and infrastructure facilities like storage, grading, etc., needs attention.
- 4) There is a well-established system for procurement of plantation produce by Goa Bhagayatdar for supplying to processing industries, however value addition at farmer level through FPOs /FPCs will benefit the farmers to realise better income.
- 5) The upcoming new airport at Mopa, Pernem can open the gateway for Goa in terms of export of produce. Pernem is proposed to be developed as routing hub by the State Govt., wherein agro processing industries could be benefitted. For agro-based industries, it is proposed to provide a sales and distribution network through outlets at major tourist entry / exit points, and provide subsidies for export promotion. State Govt. has proposed to set up cold chain facilities in the proposed logistics hubs.
- 6) North Goa has a good network of roads and is well connected with two neighbour States.
- 7) From raw material to finished goods, the processing units plays a pivotal role in overall development of the district, state and the country. Therefore, food processing units cannot be neglected. The link between the primary sector and the secondary sector acts a bridge for development. In addition to general infrastructure like power, water, transport, other infrastructure like warehouses, cold storages, APMC markets, Quality Control labs, Machinery and equipment for food processing units has to be given importance. The growth of this sector also requires support services of licensing agencies, training and skill development institutes, marketing and **branding** services, etc.
- 8) The State Government has notified the **State Mission on Food Processing Scheme 2016** 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.
- 9) 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 are covered under the scheme. Production of aerated water, packaged drinking water and aerated drinks are excluded.
- 10) 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.

#### **3.3.1.5. Suggested action points:**

- 1) Establishing Farmers Producer Organisations (FPOs) is one alternative for Primary & Secondary processing of excess produce. This can be addressed through Farmers Clubs & SHGs also.
- 2) Establishment of Food Park with latest technology in the district preferably in Pernem block will be an added advantage in terms of employment generation as well as processing and export.
- 3) Renovation / refurbishing dormant sheds in industrial estates can give scope for starting small processing units.
- 4) The central scheme ACABCs implemented through NABARD can join hands in supplementary activities.

- 5) Setting up of cold chain units attached with processing unit especially in North Goa District will open windows for export of marine products.
- 6) 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 positively projecting Goa in the international Food Processing arena. Goan Cashew and Cashew Feni are famous world over as are its *Mancurad* variety of Mangoes.

#### **3.3.1.6. Potential for increasing farmers' income:**

- 1) Processing of food crops for longer shelf life and value addition, helps the farmer not only to overcome losses due to spoilage, but increases revenue.
- 2) Investments in warehousing and cold chains to prevent post-harvest crop losses will help in creation of infrastructure and thereby increase in income of farmers.
- 3) Promotion of value addition through food processing – The objective of increasing farmers' income could be realized only through value addition. Crops like Coconut, Mango, Kokum would be commercially more remunerative with processing interventions. Food processing through FPOs and value addition for farm produce will increase in income. To start with, small processing units may be established in potential blocks for processing coconut, mango, jackfruit, kokum which will supplement the farmers income and thereby bring increase in his income substantially. This also reduces in wastage of many horticulture crops.
- 4) Nutmeg pericarp syrup, jam, mouth freshener, candy and cashew apple crunch are important value-added productions of nutmeg and cashew as an alternate source of income for farmers.
- 5) Creation of a national farm market, removing distortions and e-platform – Creation of national farm market and providing access to e-market will unfold the local market to a wider prospective.
- 6) Development of the Agro and Food Processing sector will provide an opportunity for entrepreneurship.

### **3.3.2. Ancillary activities – Others**

#### **3.3.2.1. Introduction:**

Timely and adequate credit to small and marginal farmers should be the moto of all the credit facilitating agencies. In this direction, agriculture credit is being disbursed through institutionalized channels viz., Commercial Banks, Cooperative Banks, PACS, MFIs, etc. Formation of ACABCs can strengthen these institutions and the farmers to a great extent. Small Farmers Agribusiness Consortium (SFAC) and NABARD have been encouraging promotion of Farmer Producer Companies, so that farmer members can participate in backward and forward linkage activities with professional help in a more participatory manner. Agri Clinics and Agri Business Centres managed by professionals can provide support services to farmers, often by integrating extension services of various agencies. ACABCs can propagate new farm inputs and package of practices. RBI has allowed categorization of Bank credit extended to MFIs for on-lending to individuals and also to members of SHGs / JLGs as priority sector advance under respective categories. One of the reasons for the present agrarian distress is indebtedness of farmers to non-institutional lenders. In order to help such farmers, RBI has allowed banks to extend credit to farmers to repay non-institutional loans.

In North Goa, there are 309 commercial bank branches, 359 Goa State Cooperative Bank branches, 50 Urban Cooperative Bank branches, 28 Primary Agriculture Cooperative Societies operating in urban and rural areas. Some of the PACS, have already diversified into multiple activities to retain their relevance and to keep themselves afloat. The presence of PACS becomes more relevant, especially when the absence of clear title deeds keep away potential borrowers from the reach of institutional sources.

- 1) In North Goa, the Goa Bhagayatdar Sahakari Karedi Vikri Saunstha Maryadit has three branches and 3 procurement centres, which provide procurement and marketing services to the farmers.

- 2) NABARD supports the Primary Agriculture Societies with loan and grant for diversification of activities and sustainability, through its 'PACS as Multi Service Centres' scheme under Producers Organisation Development Fund.

### 3.3.2.2. Credit flow in the past three years:

Presently these activities are getting covered under Other Priority Sector. Hence, ground level credit flow for these activities are not being captured separately.

### 3.3.2.3. Assessment of Credit Potential for 2018-19:

Assessment of credit potential for 2018-19 is as under.

(₹ lakh)

Sr. No.	Activity	Unit size	UC	2018-19		
				Phy. Units	Fin. outlay	Bank loan
1	Loans to Coop Societies	No.		6	166.67	125.00
2	Loans to PACS	No.		5	373.33	280.00
3	ACABCs	No.	10	3	30.00	22.50
	<b>Total</b>				<b>570.00</b>	<b>427.50</b>

Block-wise assessment of potentials is given in Annexure-I.

### 3.3.2.4. Availability/Gaps in infrastructure and support services:

- 1) PACS associated with the Goa State Coop. Bank Ltd. are providing services to farmers. Goa Bagayatdar and Adarsh Coop. Society are facilitating organic certification of cashew.
- 2) NABARD 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.
- 3) Out of FIF, NABARD supports demonstration of banking technology through mobile van with an objective to spreading Financial Literacy, demonstration of various digital banking technologies for Digital Financial Literacy, sensitizing and enabling merchants and customers to use digital payment system, NABARD also promotes creating awareness among the users about the precautions and safety measures while using different banking technologies and demonstration of micro ATM, ATM, POS, RuPay card transaction etc.
- 4) 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 in existence, PACs can avail financial incentive of ₹ 2 Lakh.
- 5) PACS Development Cell in the Goa State Coop. Bank has to be activated to study and develop business plan for PACS. There has been a proliferation of Urban Coop. Societies in the villages where the PACS are doing operations.
- 6) To retain their relevance and keep themselves afloat, PACS have to evolve as Multi Service Centres providing a wide array of services besides PDS, like custom hiring of farm equipments, 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.

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

### 4.1. Introduction:

As per the revised priority sector lending norms notified by RBI vide Notification dated 23.4.2015, Medium Enterprises is also covered under priority sector lending in addition to micro and small enterprises. MSME sector contributes 38% to GDP as a single largest contributor. Further, within the total priority sector target of 40%, banks have to extend credit to the extent of 7.5% to Micro Enterprises. This sector helps in capital formation and employment generation.

The limits for investment in plant and machinery/equipment for manufacturing/service enterprises are as under.

<b>Manufacturing sector</b>	
<b>Enterprises</b>	<b>Investment in plant and machinery</b>
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
<b>Service Sector</b>	
<b>Enterprises</b>	<b>Investment in equipment</b>
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

Loans to Khadi and Villages Industries (KVI) sector will be eligible for classification under the sub-target of 7.5 percent prescribed for Micro Enterprises under priority sector.

Other types of finances which can be covered under MSME sector are (i) Loans to entities involved in assisting the decentralized sector in the supply of inputs to and marketing of outputs of artisans, village and cottage industries; (ii) Loans to co-operatives of producers in the decentralized sector viz. artisans, village and cottage industries; (iii) Loans sanctioned by banks to MFIs for on-lending to MSME sector as per the conditions specified in paragraph IX of this circular; (iv) Credit outstanding under General Credit Cards (including Artisan Credit Card, Laghu Udyami Card, Swarojgar Credit Card, and Weaver's Card etc. in existence and catering to the non-farm entrepreneurial credit needs of individuals).

Tourism and mining contribute to the main economic activities of the district. Besides, allied activities that are allied to these activities are also financed under SSI in the district which include electrical works, fabrication, pharma industries, etc. Micro manufacturing and service units comprise of wooden furniture, blacksmith, bamboo crafts, embroidery / crochet, pottery, caneworks, handicrafts, small business, retail sales, repairs and servicing, etc.

₹ Make in India' a GoI initiative, was launched by Hon'ble Prime Minister, opens the door for international investors which will facilitate investment, innovation, enhance skill development, protect intellectual property and build excellent manufacturing infrastructure, so as to make India a global manufacturing hub.

Similarly, the ₹ Skill India' programme of GoI was launched by Hon'ble Prime Minister on the auspicious of World Youth Skills Day. The data of Census 2011 and 68<sup>th</sup> round of the NSSO Survey reveals, 10.4 crore fresh workers will get the opportunity and required skill training by 2022 and 29.8 crore of the existing work force requires additional skill over the same period. Accordingly, the Skill India Mission aims to 40.2 crore workers by the year 2022.

The Dept. of Industries, Trade & Commerce is dealing with the promotion, development and regulation of industries in the State. As per DITC data, there are 348 MSME units in the district with majority of them in Bardez and Bicholim blocks. The block-wise industrial set up is given in the following table :

Taluka	Micro units	Small units	Medium units	Total SSI units	Employment	Investment (P & M) (₹ lakh)	Investment (L & B) (₹ lakh)
Bardez	100	47	5	152	4294	9854.75	9870.40
Pernem	20	7	0	27	431	866.75	1087.75
Bicholim	36	16	0	52	1562	1450.21	1750.98
Sattari	22	15	1	38	915	2734.67	1996.43
Tiswadi	60	17	2	79	1109	2801.08	2168.23
<b>Total</b>	<b>238</b>	<b>102</b>	<b>8</b>	<b>348</b>	<b>8311</b>	<b>17707.46</b>	<b>16873.79</b>

(Source : DITC, Panaji)

GIDC, KVIB and GHRSSIDC of DITC are the three corporations under its fold, who maintain and develop industrial estates, promote various activities under KVIC, implement PMEGP Scheme and provide training and marketing support to artisans, small scale and cottage industries, etc. The Economic Development Corporation (EDC), through its flagship scheme, Chief Minister Rozgar Yojana provides financial assistance in the form of share capital and grant to entrepreneurs.

#### Policies and Interventions:

- 1) DITC has set up a single window clearing mechanism, under which a High Power Coordination Committee issues speedy approval for large industries and acknowledgement of Entrepreneur's memorandum I (EM-I) for setting up of MSME units. The EM-I is valid for 2 years and issued within 24 hours of submission of documents. The entrepreneur is required to submit EM-2 after the unit starts functioning. To facilitate entrepreneurs, online filing system for EM-I has also been introduced. The State Govt. has rolled out a new Industrial Policy 'Goa Investment Policy 2014' which intends to create 50000 jobs and facilitate ₹ 25,000 crore of new investment by 2019. The thrust areas of new policy are Knowledge based industry, R&D centres and financial services, Pharmaceuticals & Biotechnology, Integrated Educational Hubs, Tourism, Light Engineering, Aviation, Aerospace and Defence, Information Technology (IT) Hardware and Electronics and Agro-based and Food Processing Industries facilitating ₹ 25,000 crore of new investments in Goa in the next five years.
- 2) Under the new Investment Policy, for new units being set up in Goa, State Govt. has proposed a 'Special Incentive' in the form of VAT rebate, employment rebate and stamp duty rebate. Besides, providing training linked incentives and environmental friendly incentives and entry tax waiver for 5 years for all new units being set up in the thrust areas in backward taluks. To encourage entrepreneurs setting up new ventures in Goa, the Government is setting up an entity "Ventures Goa" in association with the private sector. Funding for the entity will be through Government and private sector resources.
- 3) Besides, all the on-going schemes of DITC are expected to be notified to continue till 2018.
- 4) The Stand Up India Scheme announced by Hon'ble Prime Minister on 5 April 2016 facilitates bank loans between ₹ 10 lakh and ₹ 1 crore to at least one SC/ST borrower and one woman borrower per bank branch for setting up greenfield enterprise. A target of atleast one account per branch has been envisaged under this programme.

**4.2. Credit flow in the past three years :** The credit flow under MSME during 2014-15 was ₹ . 22590.87 lakh, ₹ . 51026.77 lakh and ₹ . 15257.90 lakh during 2015-16 and 2016-17 respectively.

#### 4.3. Assessment of Credit Potential for 2018-19:

For the purpose of bringing in uniformity in sub-sector presentation under MSME in the PLPs it has been decided that credit projections may be made as under:

S.No.	Sector	No.of units	Financial Outlay	Bank Loan
<b>A</b>	<b>Term Loans</b>			
(a)	Manufacturing Sector Enterprises			
1	Micro Enterprises	1820	20020.00	15015.00

S.No.	Sector	No.of units	Financial Outlay	Bank Loan
2	Small Enterprises	140	24500.00	18375.00
3	Medium Enterprises	21	31500.00	23625.00
(b)	Service Sector Enterprises			
1	Micro Enterprises	2320	16240.00	12180.00
2	Small Enterprises	140	14000.00	10500.00
3	Medium Enterprises	17	6800.00	5100.00
<b>B</b>	<b>Working Capital</b>			
(a)	Manufacturing Sector Enterprises			
1	Micro Enterprises		25320.00	18990.00
2	Small Enterprises		31133.33	23350.00
3	Medium Enterprises		40266.67	30200.00
(b)	Service Sector Enterprises			
1	Micro Enterprises		30200.00	22650.00
2	Small Enterprises		26053.33	19540.00
3	Medium Enterprises		12633.33	9475.00
	<b>Total</b>		<b>278666.67</b>	<b>209000.00</b>

The details of block-wise & activity-wise projections are given in Annexure I.

#### 4.4. Availability/Gaps in infrastructure and support services:

- 1) There is a proposal for expansion of 5 Industrial Estates (Pernem, Bardez, Tiswadi, Ponda and Bicholim). The proposed areas are Latambarcem, Carambolim and Shiroda in Bicholim, Tiswadi and Ponda blocks, respectively. Establishment of micro industrial zones in each taluka during the next two years to encourage small entrepreneurs is also proposed.
- 2) There is good network of road connectivity with Maharashtra and Karnataka from Goa. Most of the raw materials for SSI units are sourced from these States.
- 3) As per the Industrial Policy, a percentage of jobs is reserved for locals. Most of the clerical jobs are catered by locals and the labourers / workers are mainly from other states. The power supply is presently sufficient and is sourced from Reliance Salgaonkar Power Co Ltd. However, the power demand is expected to go up from the present 470 MW to 827 MW by 2017. The alternative source of energy viz., Solar Energy may be brought into force and implemented.
- 4) As regards artisans and cottage industries, many of the artisans engaged in bamboo craft activities are concentrated in Pernem and Sattari blocks. The raw material is procured from nearby areas as these areas are bamboo cultivating areas. Some artisans are also engaged in seashells work, paper craft, patchwork, etc. However, there is no regulated procurement platform available and no collective bargaining, which affects the marketing and the viability of units.
- 5) Govt. has also planned three logistics hub, of which one will be located in North Goa, where warehousing, truck terminal, cold storage facilities, perishable agri-produce facilities, hazardous cargo facilities, workshops, container repairs etc. would be established.
- 6) Based on the notifications issued on regulating plot allotment in industrial estates, re-allotment need to be completed in a time bound manner. Atleast 50% of the originally registered plots are expected to be available for re-allotment, which would resolve land issue to a certain extent.
- 7) Adequate water supply to industrial estates and common facilities for waste management need to be established.
- 8) To cut logistics and time in transportation, inland waterways have to be exploited by building new jetties and utilization of unused jetties.
- 9) Traditional arts and crafts require establishment of marketing network to thrive. Govt. has to work out a policy for promoting cottage and village industries with special emphasis to skill enhancement and marketing. Diversification and design improvement will help the artisans to mark up their products.

10) Establishment of a marketing infrastructure on the lines of Dili Haat will help the artisans to showcase their produce.

#### **4.5. Suggested Action Points:**

Bankers apprehensive of financing entrepreneurs lacking collaterals. However, they may leverage the scheme of Credit Guarantee Fund Trust for MSEs for financing micro and small enterprises. Similarly, bankers can leverage three other funds, viz., Credit Guarantee Fund Scheme for Skill Development Loans; Credit Guarantee Scheme for Stand Up India; and Credit Guarantee Fund for Micro Units, being managed by National Credit Guarantee Trustee Company Limited, for financing entrepreneurs in the respective categories.

Entrepreneurs need to be educated about various aspects of GST.

Goa is blessed with natural beauty and Goa's tourism industry has been rapidly flourishing, drawing many more international and domestic tourists. Over the years, tourism in Goa has evolved and is not only known as a beach tourism destination but a multifaceted holiday destination. Various activities both in rural and urban Goa have engaged local Goans in the tourism sector manifold. There are several engaged in water sports activities on the sandy shores and also in hinterland activities like promotion of local culture, music, traditions and customs, local cuisine, etc. Goa tourism is working towards sustainable tourism. Social environment of the tourist destination and encouraging them to actively participate is another dimension in tourism development. Achieving sustainable tourism can be done through inclusive consultation across every village and understanding how tourists view tourism and what they are looking for. Need to understand and study the ecosystem, habitat, flora and fauna of the State and design activities that are minimally invasive and low in impact.

## Chapter 5: Credit Potential for Export Credit

### 5.1. Introduction:

India is emerging as one of the key players in the fast changing international trade scenario due to its large skilled workforce, growing market, raw material availability and the emergence of a mature supply base. Here knowledge-based industries, such as, information technology, offer a smooth route to world markets but yet far greater potentials and opportunities exist in the trading sector which also could be exploited through credit from financial institutions in the form of pre-shipment and post-shipment financing. The pre-shipment financing is required to produce or purchase the material and labour necessary to fulfil the sales order whereas post-shipment financing is necessary in order to generate immediate cash while offering payment terms to buyers.

Export credit is availed by export oriented Pharma companies, light engineering industry defence manufacturing industry, iron ore exporters, processed marine and cashew exporters. There are 157 Pharma Companies operating in Goa with 71 of them located in North Goa at Karaswada, Mapusa, Tivim, Corlim and Tuem industrial areas. The average annual export of iron ore from Goa was around 30 million tonnes. Bicholim and Sattari are the mining blocks in North Goa. It is roughly estimated that about ₹ 400 – ₹ 500 crore of export credit is sanctioned by Banks in the State.

### 5.2. Credit flow in the past three years:

As export credit cannot be captured in the prevailing MIS, details of credit flow are not available.

### 5.3. Assessment of Credit Potential for 2018-19:

Keeping in view the above, the projection for Export Credit for 2018-19 is as below:

Sr. No.	Activity	UC	PLP 2018-19		
			Phy. Units	Fin. outlay	Bank loan
1	Export Credit - Pre shipment and post shipment credit	400	67	35733.33	26800.00

(₹ Lakh)

The Block-wise Activity-wise projections are indicated at Annexure – I.

### 5.4. Availability/Gaps in infrastructure and support services:

- 1) The State Govt. has proposed Goa to be the hub for exports through Mormugao Port Trust.
- 2) 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.
- 3) Availability of adequate power and water supply is a serious problem faced by many pharmaceutical companies which need to be addressed urgently.
- 4) Awareness creation programmes are required to make the MSME exporters aware of the latest policy developments and encourage them to avail export credit.
- 5) Collateral security should not be insisted upon as far as possible and Gold Card Scheme should be popularized. The Banks should put in place a control and reporting mechanism to ensure that the applications for export credit are disposed of within the prescribed -time frame.

### 5.5. Suggested Action Points:

- 1) The State Government needs to play an enabling role in ensuring that necessary infrastructure associated with export of goods is in place.
- 2) State Government may create awareness about the export potential and procedures among the progressive farmers and entrepreneurs.
- 3) Investment in those activities/sectors which have huge potential for export is necessary. Banks/financial institutions should ensure adequate flow of credit to this sector.
- 4) Exporters may be encouraged to avail the export credit insurance facilities extended by ECGC.

## Chapter 6: Credit Potential for Education

### 6.1. Introduction:

Education occupies an important position in planned programmes of the State. It has become the primary concern of the State Government to fulfil constitutional directives of free and compulsory education for the children up to the age of fourteen years. In this regard, one of the major concerns is to ensure that nobody is denied professional education because he or she is poor. Catering to fulfil this need of the student community, the Indian Banks' Association (IBA) has framed a Comprehensive Model Educational Loan Scheme for adoption by all banks aimed at providing financial support from the banking system to deserving / meritorious students for pursuing higher education in India and abroad.

- 1) The district has 9 ITIs, 16 Arts and science colleges and 25 professional colleges. There is no Institute for professional studies in Agriculture, Fisheries and Veterinary Sciences. The district is serviced by 315 Commercial Bank branches from where students can avail Bank loan.
- 2) Under priority sector guidelines of the RBI, banks can lend up to ₹ 10 lakh to students for studies in India and ₹ 20 lakh for courses abroad. Loans to individuals for educational purposes including vocational courses upto ₹ 10 lakh irrespective of the sanctioned amount will be considered as eligible for priority sector.
- 3) A Central Sector Scheme under Ministry of Human Resources and Development provides 100% interest subsidy during the study period and subsequent moratorium period before commencement of repayment on Education Loan to the students from Economically Weaker Section (EWS) with a total parental upper income limit of ₹ 4.50 lakh.
- 4) 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 upto a maximum of 75% of the outstanding loan. No processing charges and margin will be insisted on such loan.
- 5) There is also a proposal in the Union Budget 2015-16, to establish a Student Financial Aid Authority to administer and monitor scholarships and education loans, offering prospects of revitalising the country's education loan system

### 6.2. Credit flow in the past three years:

Credit flow to Education during 2016-17 was ₹ 81.55 crore in North Goa district.

### 6.3. Assessment of Credit Potential for 2018-19:

Around 12000 students are studying general courses in college, 2300 students studying professional courses education and 8500 students doing ITI courses in North Goa District. Considering the infrastructure available planned and gaps identified, the potential assessed for Education is as under.

(₹ lakh)

Sr. No.	Activity	Unit (no)	UC	2018-19		
				Phy. Units	Fin. outlay	Bank loan
1	Education loan	No.	10	3700	37000	27750

Details are given in Annexure I

### 6.4. Availability/Gaps in infrastructure and support services:

- 1) There is a good network of Bank branches in the district to avail education loans.
- 2) 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 per cent literacy as per the census 2011.
- 3) Banks can cover the education loans under Credit Guarantee Fund Scheme for Education Loans being managed by National Credit Guarantee Trustee Company Ltd.

## Chapter 7: Credit Potential for Housing

### 7.1. Introduction :

As part of the mission of “Housing for All by 2022”, the Union Cabinet has approved Pradhan Mantri Awas Yojana - Gramin (PMAY-G), which has come into effect from 1<sup>st</sup> April 2016. This scheme also provides for facilitating institutional finance up to ₹ 70,000/- (*Rupees seventy thousand only*) per beneficiary in rural areas, if he / she opts for it. Housing for all is an important agenda of GoI and has, hence, sought to create an enabling and supportive environment for expanding credit flow to the housing sector, thereby, increasing home ownership in the country.

The revised Priority Sector Lending (PSL) guideline of RBI covers housing loans in both metro and non-metro areas. In this chapter, housing loans to individuals in non-metro centres only have been covered. Under non-metro centres the revised housing loan limit fixed by RBI is ₹ 20/- lakh and ₹ 2/- lakh for purchase / construction of dwelling units and for repairs respectively.

- 1) The Central Government aims to provide housing to all its citizens by the year 2022. In Goa, it is assessed by Ministry of Housing and Urban Poverty Alleviation (MoHUPA), GoI, in 2011, that 3 lakh housing units will be needed (2 lakh in urban areas and 1 lakh in rural areas).
- 2) Under *Indira Awas Yojana*, a GOI scheme, financial assistance of ₹ 70,000 to ₹ 75000 is provided for construction of houses to members of the SC/ST, freed bonded labourers and to non- SC/ST BPL rural poor. The MoHUPA has designed an Interest Subsidy Scheme for addressing the housing needs of Economic weaker section and low income Group segment in urban areas.
- 3) The Department of Tribal Welfare, Govt. of Goa is implementing two schemes for house construction and repairs (*Atal Asra Yojana*), whereby assistance of ₹ 2 lakh and ₹ 1 lakh, respectively, is provided to beneficiaries.
- 4) Recognising the importance of housing in rural areas, NABARD has introduced three 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 Primary Agriculture Cooperative Societies, Schedule Cooperative Banks, District Central Cooperative Banks and Primary Urban Cooperative Banks.
- 5) Housing industry is growing at a fast pace leveraging on the tourism status of the State. The credit flow to Housing sector is mostly driven through NRIs and salaried class in Goa. During 2016-17, ₹ 265.79 crore was extended as housing loan under priority sector in North Goa.

### 7.2. Assessment of Credit Potential for 2018-19:

Considering the infrastructure available planned and gaps identified, the potential assessed for Housing is as under. (₹ lakh)

Sr. No.	Activity	Unit	UC	2018-19		
				Phy. Units	Fin. outlay	Bank loan
1	Housing loan-new	No.	20	3305	66100.00	49575.00
2	Housing - repairs	No.	2	1200	2400.00	1800.00
	Total			4505	68500.00	51375.00

### 7.3. Availability/Gaps in infrastructure and support services:

- 1) Clear land titles are not available to non-mutation of land for generations making it difficult to create effective mortgages for extending housing loan.
- 2) To avoid congestion in urban areas, the State Govt. needs to develop infrastructure facilities in rural areas. Govt. may also think of setting up satellite towns with all social infrastructure facilities. Single window system to clear the building plans is needed urgently to minimise delays in getting approvals and licenses.

## Chapter 8: Credit Potential for Renewable Energy

### 8.1. Introduction:

- 1) The Ministry of New and Renewable Energy (MNRE), GoI has the mandate to develop and deploy new and renewable energy sources to supplement the energy requirement of India. These sources of energy occur naturally and can be replenished on a human timescale such as sunlight, wind, rain, tides, waves and geothermal heat. Their intervention has now resulted in the development of technologies and devices that have become commercially available viz. biogas plants, improved wood stoves, solar water heaters, solar cookers, solar lanterns, solar street lights, solar pumps, wind electric generators, water-pumping wind mills, biomass gasifiers and small hydro-electric generators.
- 2) MNRE, GoI also provides financial support for installation of Micro Hydro Power projects upto 100 KW capacity in the country set up by Government dept., agencies, co-operative societies, local bodies, tea gardens, NGOs, entrepreneur etc. for the benefit of villagers living in the remote & inaccessible hilly areas to meet their local electricity needs in decentralized manner. A support of ₹ 1,25,000/-per KW is provided for installation of these projects.
- 3) Department of Financial services has instructed to all Public Sector Banks to encourage home loan/home improvement loan seekers to install rooftop solar PV plants and include cost of system in their home loan proposals. The rooftop solar systems from 1 kWp upto 500 kWp or in combination can be set up on the roofs. About 10sq.m area is required to set up 1 kWp grid connected rooftop solar system.
- 4) Goa does not have any power generation facilities of its own. The entire energy requirements are drawn from Central and Western grid. It is estimated that the total energy requirement of Goa in 2017 would be 75% more than the present requirement. The increasing demand for power makes it imperative to look for alternate/sustainable sources of energy.
- 5) The climate in Goa is suitable for harnessing solar energy; however wind speeds are not adequate to tap wind energy. Around 350 to 400 tonnes of waste per day is collected by civic bodies, while another 100 tonnes of unaccounted garbage is being dumped at Curca, Panjim and Tollem-bandbag, Ponda, which could be effectively used for power generation. Biogas units are common in large dairy farms.
- 6) 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 Department of Agriculture and KVIC are the nodal agencies for biogas development. 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. GEDA provides 25% subsidy (max. ₹ 4 lakhs) for purchase of biomass briquetting machines. NABARD supported a project for building a mobile biomass briquetting unit under 'Rural Innovation Fund', with grant assistance of ₹ 4.86 lakh. The prototype has since been successfully demonstrated and being considered by the State Govt. for inclusion under subsidy scheme.

### 8.2. Credit flow in the past three years:

GLC flow to this sector during 2016-17 was ₹ 0.16 crore.

### 8.3. Assessment of Credit Potential for 2018-19:

Taking into account the available and planned infrastructure and the gaps therein, the potential for Renewable Energy is assessed as follows:

(₹ lakh)

Sr. No.	Activity	Unit size	UC	2018-19		
				Phy. Units	Fin. outlay	Bank loan
1	100 LPD water heater unit	No.	0.22	122	26.84	20.13
2	200 LPD water heater unit	No.	0.44	165	72.60	54.45

3	300 LPD water heater unit	No.	0.66	25	16.50	12.38
4	400 LPD water heater unit	No.	0.88	10	8.80	6.60
5	500 LPD water heater unit	No.	0.99	25	24.75	18.56
6	Solar street lighting system	No.	0.27	110	29.70	22.28
a)	Model -I ( 40 Wp)	No.	0.20	56	11.20	8.40
b)	Model -DC (150Wp)	No.	0.30	60	18.00	13.50
7	Solar irrigation pumps		5.13	15	76.95	57.71
8	Biogas plant	No.	0.30	220	66.00	49.50
9	Biomass briquetting machines		4.00	18	72.00	54.00
	<b>Total</b>			<b>826</b>	<b>423.34</b>	<b>317.51</b>

The details of block-wise and activity-wise projections are given in Annexure I.

#### **8.4. Availability/Gaps in infrastructure and support services:**

- 1) There are a number of private suppliers providing solar based inverters for home and office use, hybrid power back systems, etc. The repairs and maintenance services are taken care of by the suppliers.
- 2) GEDA also provides subsidy under MNRE Schemes apart from additional subsidy for installation of solar lighting and thermal systems.
- 3) Awareness about renewable energy sources is not adequate among the public. Long term benefits of using alternate sources of energy and information about the subsidy schemes of the State and Central Govt. need to be aggressively disseminated among the public.
- 4) Since nearby 100% subsidy is available for biogas installation, all dairy farm owners with 4-5 animals may be encouraged for setting up of bio gas units. Solar PV systems to supplement electrical power may be made mandatory for all Govt. organisations.
- 5) Govt. may also explore possibility of setting up Biomass gasifiers, where there is large generation of biomass waste.
- 6) As the popularity for solar lighting and heating equipment's is growing day by day, there already exists a wide gap between demand and supply. Here, banks can give a fillip to this activity in North Goa by providing the necessary credit support under the credit linked subsidy schemes of MNRE, Gol.

#### **8.5. Suggested Action Points:**

With the increasing concerns about environment, people need to look at energy options which are renewable. Despite massive campaigns, field level awareness initiatives should continue unabated, till the renewable energy is adopted as first option.

## Chapter 9: Credit Potential for Others

### 9.1. Introduction:

Provision of credit and other financial services and products to individual and SHGs/JLGs will enable the underprivileged poor people to improve their living standards which will constitute micro credit. In terms of revised RBI guidelines on priority sector lending, loans not exceeding ₹ 50,000/- per borrower is to be provided directly by banks to individuals, SHG/JLGs and distressed persons to repay their debt to non-institutional lenders. Moreover, overdraft facility upto ₹ 5,000/- under PMJDY is also available to be extended by banks.

The Hon'ble Prime Minister of India on 15<sup>th</sup> August, 2014 announced "Pradhan Mantri Jan-Dhan Yojana (PMJDY)" which is a National Mission for Financial Inclusion. Under the scheme, the GoI ensured access to various financial services like availability of basic savings bank account, access to need based credit, remittances facility, insurance and pension to the excluded sections i.e. weaker sections & low income groups through effective use of technology. Initially, all uncovered households were covered with banking facilities by opening basic bank accounts and they were provided with a RuPay Debit Card. Thereafter, facility of an overdraft upto ₹ 5000/- (Rupees five thousand only) to every basic bank account holder would be considered after satisfactory operation / credit history of six months. Further, it has been decided that all Government benefits will flow into this account - facilitating servicing of interest and reducing the chances of account becoming dormant.

This provision of formal credit is projected to have multi-dimensional benefits as it will be a great support for poor borrowers in meeting their basic needs and preventing them from falling into the clutches of money lender in both rural and urban areas. However, banks will have to make the customers aware that grant of a credit facility which needs to be repaid in time in order to get fresh limits. Learning to manage loan accounts shall be the first step to larger dosage of credit by creating their credit history and help the banks in credit appraisal for their future needs.

In North Goa, Women SHG programme is under implementation. The JLG concept is also gaining popularity for meeting non-farm credit requirement. The progress of SHGs has almost reached saturation and is growing only in pockets with migrant population. As at the end of 31 March 2017, 5416 SHGs were formed in the district with a total disbursement of ₹ 8.81 crore.

### 9.2. Assessment of Credit Potential for 2018-19:

Considering the infrastructure available planned and gaps identified, the potential assessed for SHG, JLG loans and ecotourism units is as under. (₹ lakh)

Sr. No.	Activity	Unit	UC	2018-19		
				Phy. Units	Fin. outlay	Bank loan
1	Eco-tourism units	No.	20	16	320.00	240.00
2	Loans to SHGs	No.	1.50	1350	2666.67	2000.00
3	Loans to JLGs	No.	1.50	970	1940.00	1455.00
4	PMJDY loans	No.	0.05	1000	66.67	50.00
	<b>Total</b>				<b>4993.33</b>	<b>3745.00</b>

### 9.3. Availability/Gaps in infrastructure and support services:

- 1) Awareness on JLG concept is required both for the needy (demand side) and financing banks (supply side). For proper borrower identification and avoid duplication of loan, banks need to use CIBIL records to check borrowers' financial discipline.
- 2) Banks need to consider lending to JLGs based on realistic loan assessment instead of sanctioning prefixed flat amounts.
- 3) SHGs need to be assessed and reviewed for revival and credit linkage. NRLM and WSHG need to complement each other. Banks may rectify software issues so that all WSHGs get loans at stipulated 7% rate of interest.

## Chapter 10: Infrastructure Support

### 10.1. Introduction

Infrastructure is a broad term encompassing investments which create the base for direct economic activities and generation of income. It is often classified into economic and social infrastructure. Economic infrastructure includes (a) energy, viz., coal, electricity, petroleum, etc., (b) transport services, viz., railways, roads, shipping, civil aviation, etc., and (c) communications. Social infrastructure consists of education, health and civic amenities like water supply, sanitation, housing, etc. While the economic infrastructure directly supports the process of production & distribution, the social infrastructure supports the economic system indirectly.

The above infrastructure activities and facilities helps to sustain the growth in production and income generation in rest of the economy rather than production and income generation within the infrastructure enterprises themselves. Further, investment in rural infrastructure creates new economic opportunities and activities, generates additional employment and income, facilitates and improves delivery of other rural services and enhances democratic process and skills among the rural poor. However, it has been observed that rural infrastructure, many a times, remains a concern of State Governments where, for various reasons, mainly resources constraints, does not get the attention it deserves. Moreover, there was no effective institutional arrangement for financing rural infrastructure. This inadequacy of public investment in agriculture and rural sector has thus led to a number of rural projects lying incomplete in many States making the investments infructuous.

**10.1.1. Public Investments :** The major components of public infrastructure are electricity, roads, bridges, drinking water, transport system, communication, etc. The components pertaining to agricultural infrastructure are land, irrigation, soil and water conservation, seed farms, cattle breeding centers, diagnostic labs, quality control facility, input supply and logistics, health care, dry and wet storage units, market information and connectivity, KVKs, Agriculture Kiosks, etc.

### 10.1.2. Current Status :

**a. Electricity :** North Goa has 166 villages and all of them are electrified. Goa is dependent on the power allocated from the Central Generating Stations in the Western and Southern Regions, wheeled through the neighbouring State Grids(454 MW). Power Purchase Agreements have been signed with NTPC, NHPC and RGPL. Govt. of Goa with the support of GAIL is exploring the possibility of setting up of at least one gas based power station with minimum of 250 MW. The extension of natural gas supply from Gokak by GAIL is expected to provide low cost power to the big industries.

The district does not have any power generation of its own except a 48 MW Naphtha based power plant of M/s Reliance Salgaonkar Power Co. Ltd, which produces 36 MW of power. The power requirement of major Industrial Estates is met from this plant. Reduction in distribution losses, setting up of power generation units, exploiting renewable energy sources, promoting energy conservation are the need of the hour. The new industrial policy and thrust given on Pharma, Biotech and IT industries, uninterrupted power supply is warranted.

The per capita consumption of power in Goa is 2259 Kwh which is the third highest in the country, when compared with the national average of 733 Kwh. As per the 18th Electric Power Survey conducted by Central Electricity Authority, the projected demand of Goa for the year 2017-18 is 824 MW, as against the current demand of 470 MW. Though the Govt. is exploring various options to meet the future demand, the consumption pattern and increasing need for power are matters of concern.

### **b. Roads and Bridges:**

Total length of surface and unsurfaced roads in Goa - 10225 km. The NH-47 and 4A covers a total length of 264 Km. The length of the State highway is 279 km and the total length of surfaced roads under PWD is 5045 km.

There are major district roads and rural roads, small inter linking roads in the district, which are black topped. Widening of existing roads, proper maintenance and construction of by-passes, proposed Mopa airport in Pernem will ease the traffic congestion problem to a great extent. Alternate ways of construction of roads may be thought by the Govt.

Public transport system is captured by private bus operators and services of Kadamba Transport Corporation (KTC) are limited. The inland water transport for cargo as well as passenger transport is looked after by the Captain of Ports. Mandovi, Tiracol and Chapora are the major rivers and the inland waterways could be a good source for transportation for easing the congestion on roads. The proposed Logistics Network including development of transport facilities, minor ports and jetties, etc. are important. Logistic Hub is being considered at Pernem. Tourism can be developed along with fishing and navigation on the Chapora and Tiracol rivers, for which they need to be developed.

**c. Irrigation :** The Net Sown area of the district is 66409 ha. The Tillari Irrigation Project is a joint venture of Govt. of Goa and Govt of Maharashtra, across river Tillari/Chapora which joins Arabian Sea near Vagator village in Bardez. The total irrigation area of the project is 21197 ha, of which 6676 ha is in Sawantwadi and Dodamarg Taluka of Maharashtra and 14521 ha is in Goa - Bicholim (5130 ha), Bardez (5137 ha) and Pernem (4254 ha). Nearly, 73 villages will be benefitted by this project. In addition to the provision for irrigation, provision is made for water supply to industrial and for drinking water purpose. NABARD has, till date, sanctioned ₹ 392.70 crore in six phases under the various tranches of RIDF to the State Government for Tillari Irrigation Project and Command Area Development Works. Against this, the amount utilized by the State Government is ₹ 364.95 crore

**d. Drinking water supply :** The major water requirement for domestic and industrial purposes is presently catered through Chandel, Assonora and Opa Water Works. To augment the water supply at Assonora Water Works, water is pumped from Chapora River to Assonora River in Madei (Mandovi) basin, by interlinking these rivers. The WRD has constructed a series of open type bandharas all along the river course, which protect agriculture and forestland from submerging as the water storages are within the riverbanks.

Tranche	RIDF I to XI	RIDF XII to XVII	RIDF XVIII onwards	Total
<b>Rural Roads &amp; Bridges</b>				
No of Projects	30	-	17	47
Of which, completed	24	-	3	27
RIDF Loan	11.97	-	373.64	385.61
<b>Irrigation</b>				
No of Projects	19	4	3	26
Of which, completed	17	4	0	21
RIDF Loan	4.82	270.75	173.01	448.58
<b>Rural Drinking Water Supply/Health Centres</b>				
No of Projects	1	2	6	09
Of which, completed	1	2	0	03
RIDF Loan	3.67	18.80	232.70	255.17
<b>Total</b>				
No of Projects	<b>50</b>	<b>6</b>	<b>26</b>	<b>81</b>
Of which, completed	42	6	3	57
RIDF Loan	<b>20.46</b>	<b>289.55</b>	<b>779.35</b>	<b>1089.36</b>

#### **Rural Infrastructure Development Fund (RIDF) Projects in the District**

With a view to accelerate overall growth rate, development of rural infrastructure is very crucial. Against this back drop, RIDF was set up in 1995-96 under which projects relating to Irrigation, Roads & Bridges, Forest Development, Flood Protection, Watershed Development, Fisheries, Drinking Water and other Social Sectors like Primary Schools, Primary Health Centres etc. are sanctioned. NABARD

has extended financial support to the State Govt. under RIDF for investments in rural infrastructure projects such as rural roads, bridges, minor / major irrigation projects, anganwadi centres/schools, Infrastructure and sea erosion protection works taken up by the PWD and the WRD. Summary position of projects sanctioned under various tranches of RIDF as on 30 September 2017 in the district is given below:

- 1) RIDF assistance of ₹ 15.52 crore for schools under RIDF XIII and ₹ 2.93 crore for Anganwadi Centres under RIDF XV was sanctioned for the State as a whole.
- 2) RIDF Assistance of ₹ 18 crore is sanctioned towards flood protection measures at Ajoba Temple, Keri.
- 3) 01 CHC at Tuem, Pernem has been sanctioned RIDF Loan of ₹ .47.68 crore.
- 4) No loans were sanctioned under RIDF II, III, V, IX, X, XI & XII tranches

### 10.1.3. NABARD Infrastructure Development Assistance

A new product, NABARD Infrastructure Development Assistance (NIDA) has been designed for State Governments and other state-owned organizations with an aim of funding **rural infrastructure** creation by providing assistance to State Governments, outside RIDF borrowing and on flexible terms. The unique features of NIDA is that the terms will be customized as per the borrower's requirements, based upon the project and borrower's risk profile. The key features of NIDA are as below.

Key features	Details
Type of loan	Term loan
Tenure	Long term - upto 15 years
Interest rate	Varies based upon project and risk profile of the borrower
Moratorium	Up to 3 years
Security	Appropriate security will have to be provided by borrower based upon risk profile and nature of project. State Govt guarantee is not mandatory, however NABARD may request it based upon the risk profile and nature of the project.
Repayment	Maximum up to 15 years including moratorium. A project specific ballooning repayment schedule can also be designed.

Two projects have been sanctioned in Goa under NIDA, both of which are in North Goa, detailed of which are as under:

#### a. Sewerage Scheme for Porvorim and its surrounding areas in Bardez Taluka – Goa- Phase I under NABARD Infrastructure Development Assistance (NIDA)

Borrower	Sewerage & Infrastructural Development Corporation of Goa Limited (SIDCGL)
Project Cost and Loan	Project cost: ₹ 94.25 crore
	<b>Term Loan: ₹ 70.69 crore under NIDA</b>
	Equity contribution: ₹ 23.56 crore (State Government)
Phasing	Estimated completion date - March 2018

The Phase-I of the project is covering Porvorim and its surrounding areas in Bardez Taluka and the areas covered are Penha De Franca (Part), Salvador Do Mundo and Pomburpa. The project is expected to provide a clean environment in Porvorim and its surrounding areas, reduce water borne diseases, improve the status of health, improve water quality status of the River Mandovi and Aquatic life (including Marine Life and Mangroves) as well as to safeguard pollution of human food chain & improve socio economic conditions by attracting more tourists.

#### b. Construction of Bridge across river Mandovi including approaches on NH 17 between Punadlik Nagar junction and Mercedes junction under NIDA

Borrower	The Goa State Infrastructure Development Corporation Ltd. (GSIDCL)
Project Cost and Loan	Project cost: ₹ 514.00 crore
	<b>Term Loan: ₹ 462.60 Crore under NIDA</b>

	Equity contribution: ₹ 51.40 Crore (State Government)
Phasing	Estimated completion date - December 2018

The proposed bridge will be one of its kind bridge on river Mandovi and is expected to relieve the traffic congestion to a large extent.

### c. Critically important projects in the district:

The infrastructure which is critical for the district and could be assisted under RIDF is given below:

Infrastructure	Area	Potential	Est. cost
Tillari Irrigation	Pernem & Bardez Block	Tail end distributaries, canals / waterways desilting, repairing and lining	₹ 10 crore
Desilting, deepening of river	Surla, Bicholim	Desilting of river Surla and deepening of the same along a stretch of around 8 kms	₹ 3 crore
Storage godowns of 500 MT or less	2 villages each in Ponda, Sattari & Bardez blocks	Coconut, cashew, arecanut cultivation is undertaken in these blocks	6 villages x 500MT x ₹ 3500/MT x 125% (labour and overheads are high in Goa) = app. ₹ 1.3 crore
Cold storages (100 MT and less)	1 each in Sattari, Bardez & Tiswadi blocks	Vegetables and fruits go waste in these blocks and are sold at unremunerative rates due to lack of storage capacity.	3 x 100MTx ₹ 8000/MT = app. ₹ 24.00 lakhs
APMC yards - Repairing and modernisation	One each in Sanquelim, Valpoi & Pernem	Modernisation will increase inflow to godowns	App. ₹ 3 crores
Bio-fertilizer, bio-pesticide unit	Bardez, Sattari, Ponda	These blocks have large areas under field as well as plantation crops. Access to bio-inputs will boost production	App. ₹ 6 crore
Large scale farmyard manure composting unit	Pernem	Location decided based on large quantum of biomass available for composting	App. ₹ 1 crore
Mobile veterinary vans for veterinary dispensaries	One each in identified 32 key village centres	Veterinary services are inadequate to respond to emergencies /effective Artificial Inseminations	App. ₹ 3.2 crore
Small animal slaughter houses	One for Tiswadi, Bardez, Pernem, Sattari & Bicholim blocks	There are no slaughter houses. Presently, small animal slaughter is done illegally and unhygienically.	App. ₹ 10 crore

## 10.2. Social Infrastructure involving Bank Credit

The provision of drinking water, sanitation, education, and health defines the quality of life of an individual. These services affect day-to-day life of people and have long-term impact in terms of longevity and earning capacity. Piped drinking water, which is treated and transported to households is an expensive commodity and more so in a sparsely populated villages. However, villagers need good quality potable water as much as anyone else in the country. Swaccha Bharat campaign has re-emphasized the need of basic amenities for hygiene and dignity of an individual. Education of the young takes centre stage for future growth. Government of India through various programme has

strived to achieve 'Education for All'. To keep the work force active and contributing to the GDP, delivery of health care especially in the rural area has taken priority.

Given the importance of social infrastructure for development and its impact on ultimate credit absorption in rural and urban areas, RBI has, in its latest Priority Sector Lending Master Direction issued by RBI on 7 April 2016, stipulated that bank loans up to a limit of ₹ 5 crore per borrower for building social infrastructure for activities namely schools, health care facilities, drinking water facilities and sanitation facilities in Tier II to Tier VI centres have now been brought under the ambit of PSL norms. It is expected that investments under this sector, especially in the rural areas, will create new employment opportunities, increase income and improve delivery of other services to the rural poor. As per RBI guidelines, centres with less than one lakh population have been categorized as Tier II to Tier VI centres – All places in the North Goa district fall under this category.

#### 10.2.1. Current Status :

Some of the social indicators which have a bearing on estimation of potential under the Social sector for bank credit are given below:

**a. Health :** The district has 5 Govt. Hospitals, 76 Private Hospitals, 20 Govt. Dispensaries, 3 Urban Health Centres, 130 Sub Health Centres and 14 Community Health Centres. The infrastructure facilities and maintenance of the Govt. hospitals require immediate attention and needs to be strengthened by providing adequate rooms for patients, ambulance facility, bold bank, doctors, 24x7 pharmacy centres, etc.

**b. Education :** Goa is one of the states having high literacy rate in the country. As per the 2011 census, district has recorded literacy rate at 89.6% (male – 93.4%, female – 85.6%). There are 729 primary schools, 266 middle schools and 295 secondary and higher secondary schools. However, infrastructure-wise the schools require strengthening, especially in respect of functional toilets and safe drinking water, adequate teachers, play grounds, computers, lab and good class rooms.

**c. Sanitation and Sewage disposal:** Though Nirmal Bharat Abhiyan programme (Total Sanitation Campaign) is implemented with subsidy component of ₹ 26000 per unit in the State, it is recorded that 36% of households in North Goa do not have toilet facilities. Waste disposal has become a serious issue in towns as well as villages, especially when the existing civic amenities have to cope with waste generated by floating population which is equal to the resident population. Swachh Bharat Abhiyan has caught the attention of public at large and in the process sanitation is gaining importance. Solid Waste Management has to be done in a more scientific manner by waste segregation and recycling, wherever possible. The Sewerage Infrastructure and Development Corporation of Goa Limited is implementing 9 projects for strengthening sewerage drainage network in the State. Two of the projects are supported under NABARD's RIDF and NIDA, of which one (Porvorim Sewerage Development Project) is in North Goa

#### 10.2.2. Assessment of Credit Potential for 2018-19

Though Govt. is promoting rural sanitation, it is considered that atleast 10% of the households without toilet facilities would add a toilet block to their homes with bank credit. Besides, schools without proper sanitation and drinking water facilities need build/install the same. Though waste management is handled by Govt. Departments, private initiatives are gaining relevance in the district for economic utilisation of waste. Keeping this in mind, the credit projections for Social Infrastructure during 2017-18 has been worked out and given below. Block-wise details are furnished in Annexure II.

(₹ lakh)

Sr. No.	Activity	Unit	UC	2018-19		
				Phy. Units	Fin. outlay	Bank loan
1	Construction of toilet blocks in individual homes	No.	1.3	2700	3510.00	2632.50
2	School toilet blocks and drinking water facility	No.	20	50	1000.00	750.00

3	Transport vehicles in health sector (emergency vehicles, hearse vans, etc)	No.	15	10	150.00	112.50
4	Paper and plastic waste recycling unit	No.	19.71	37	729.33	547.00
5	Waste disposal by composting/biogas units in hotels and bakeries	No.	2	180	366.00	270.00
	<b>Total</b>				<b>5749.33</b>	<b>4312.00</b>

### 10.2.3 Availability of Infrastructure, critical gaps, interventions required.

The development of social infrastructure assumes great importance since it is directly linked to the well-being of local population and supports the economic system indirectly. Govt. Departments need to take a review of the sanitation and drinking water availability status of the schools and link them with the on-going sanitation programmes of Govt. Wherever the financial outlays are large, such projects may be financed by Banks; a suitable and sustainable model for maintenance and recovery of cost of investment could be worked out by Govt. in consultation with Banks to facilitate the schools to develop the much needed facilities.

- a. Since, leach pit based toilets or dry toilets are not suitable in hard strata, it becomes necessary to build a full-fledged toilet with underground septic tank. Govt. while sensitizing the rural people also has to provide advice on appropriate structures, to prevent structural failures and groundwater contamination.
- b. At present, bio gas promotion is linked to dairy animals only. Since there are possibilities of biogas generation from other wastes, such as food waste, bakery waste, animal processing waste, etc, appropriate technology for the same could be evaluated for commercial implementation.
- c. The efforts of Govt. to segregate waste at source could be complimented by promoting setting up of dry waste recycling units for a cluster of village panchayats. However, segregation of waste need to be made mandatory.

Govt. can think of awarding Clean District, to encourage and motivate the Public to maintain their areas under the *Swachh Bharat Abhiyan*.

## Chapter 11: Informal Credit Delivery System

### 11.1. Introduction :

Today, the SHG-BLP is the largest microfinance programme in the world because of its sheer size and population it touches. Micro Finance is a revolutionary and pro-poor economic activity that has been recognized worldwide as an efficient tool to combat poverty, create jobs and generate income. Above all, it has been regarded as a tool of financial inclusion. The SHG-BLP programme has been a fore runner in driving the Financial Inclusion initiatives in the country. As on 31 March 2017, 85.77 lakh SHGs were saving linked with financial savings of ₹ 16114.23 crore and 48.48 lakh SHGs had a cumulative credit outstanding of ₹ 61581.30 crore. As regards WSHGs, 73.22 lakh WSHGs were saving linked with financial savings of ₹ 14283.42 crore and 17.16 lakh WSHGs credit linked to the tune of ₹ 36103.13 crore as on 31 March 2017. As regards JLGs, 24.53 lakh were credit linked as on 31 March 2017 with a total loan of ₹ 26848.13 crore.

Though SHG-BLP and WSHG programme are being implemented in the District, credit linkage is low. There are 31 NGOs participating in development programmes but only a few are active in promoting microfinance activities. The District Rural Development Agency (DRDA) is the nodal agency for promoting SHGs. While Goa StCB is active in formation and credit linkage of SHGs, major commercial banks like SBI, Bank of India, Corporation Bank, Bank of Baroda are prominent for credit linkage.

**Gol's intervention :** National Rural Livelihoods Mission (NRLM) - Aajeevika was launched by the MoRD, Gol in June 2011 by restructuring SGSY with a mandate of reaching out to 100 million rural poor in 6 lakh villages across the country. It has since been renamed as Deendayal Antyodaya Yojana – National Rural Livelihood Mission (DAY-NRLM). DAY-NRLM has adopted 'demand driven' strategy, in place of SGSY's 'allocation based'. Participatory Identification of Poor (PIP) criterion is followed for covering the deserving, but excluded poor households.

### 11.2. NABARD's Strategic Focus on SHG-BLP

Goa State has 8,622 SHGs, out of which 2,191 SHGs have been credit-linked. Goa State has a population of 14,58,545 with 3,43,000 households, out of which 1,28,000 households are in rural area. To cover rural households, about 1,100 SHGs are required, whereas the State has over 7,500 SHGs, signifying inclusion of not so poor and non-poor households also in SHGs, besides issues such as multiple membership, not closing the account with the previous bank while accessing fresh loan in a different bank, etc. However, only 27% of the SHGs (2,067) are taking credit. In view of this, the following strategy has been evolved by consensus with all the stakeholders.

- 1) **Segregation of inactive SHG accounts:** Banks need to segregate inactive accounts and take steps for closing the accounts in accordance with the RBI guidelines. Active SHGs should be credit-linked.
- 2) **Opening SB Accounts for SHGs :** Some banks provide Cash Credit Limits to SHGs and are not opening separate Savings Bank Accounts for SHGs. The uniqueness of SHG-Bank Linkage promoted by NABARD is development of a corpus in SHGs with the savings, interest earnings, revolving fund assistance, interest subvention and such other subsidies. If the corpus is allowed to grow over a period of 15 to 20 years, the SHGs can have their own fund to meet the credit and risk mitigation needs of their members, weaning them away from not only moneylenders, but also banks. In the absence, of SB A/c, SHGs would deprive themselves of creating their corpus. Hence, banks should provide savings services to SHGs, even if they have taken Cash Credit Limit or have borrowed from outside entities like MFIs/NBFCs not providing saving services.
- 3) **Intermediation between SHGs and Banks:** At the time of launching SHG-BLP it was envisaged that initially trained NGOs provide intermediation between banks and SHGs, so that over a period of three to four years SHGs would learn to deal with banks and banks would learn to deal with SHGs. However, it is being felt that the services of intermediary agencies are still required. If good NGOs are not available to provide effect intermediation services, it is better to empower the

representatives of SHG Federations promoted under GSRLM to provide intermediation services to SHGs and banks.

- 4) **Average Per SHG Loan size:** The average per group loan is ₹ 2.07 lakh in the State (₹ 1.74 lakh in Public Sector Banks, ₹ 3.01 lakh in Private Sector Banks and ₹ 1.41 lakh in Cooperative Banks). Banks should strive to increase the average per group loan to the level of ₹ 3.00 lakh on par with Private Sector Banks especially taking into account the livelihood needs.
- 5) **Sensitizing Branch Personnel:** The expectation that branches would learn to deal with SHGs/rural clientele has been affected due to pressure of work, frequent changes in branch personnel, lack of access to policy aspects of SHGs/Farmers' Clubs/Government Sponsored Programmes. Banks to sensitize branch personnel in periodical meetings, by associating RBI/NABARD/DDMs/SLBC/LDMs.
- 6) **NPAs in SHG Portfolio:** NABARD had conducted quick studies about NPAs in SHG portfolio of banks. At all India level, the NPAs in SHG portfolio was 6.50% as on 31.3.2017. The position in Goa State is very good as the corresponding figure for Goa is only 2.94% (2.11% in PSBs, 0.07% in Pvt SBs and 6.16% in Cooperative Banks). The following strategy for reduction of NPAs in SHG portfolio is to be adopted.
  - a) GStCB to launch special drive for reducing NPAs in SHG portfolio, by associating their branches/PACS/Financial Literacy Centre.
  - b) Use NGOs/GSRLM promoted Village Level and Block Level Federation of SHGs for providing intermediary services between banks and SHGs.
  - c) Adopt Micro Credit Plan as part of loan documents to track loan use pattern and focus on investments in income generating activities and end use of loans.
  - d) Integrate with GSRLM for promoting livelihoods with bank loans, leveraging GSRLM plans for capacity building and skill upgradation of SHG members.
  - e) All eligible poor rural households in the country to be covered through SHG-BLP by March 2017
  - f) Promotion of Women SHGs in 150 Left Wing Extremism (LWE) affected and backward districts of the country to be accelerated (North Goa district being one of them)
  - g) Convergence with Government Programmes like National Rural Livelihood Mission (NRLM) to maximise benefits to the SHG members
  - h) Focus on convergence of SHG-BLP and Financial Inclusion (FI) initiatives
  - i) Priority to shift from promotion of SHGs to provide livelihood opportunities to the SHG members in a calibrated manner through skill building, production optimisation, value chain facilitation and market linkage.

### 11.3. Status of SHG-BLP and WSHG programme

The Planning Commission has estimated poverty level at 5.09 % in Goa as against the national average of poverty at 22%. The urban poverty in Goa is at 4.09%, while the rural poverty is 6.81%. Therefore, the growth of the micro-finance is slow as compared to other states. However, the district is identified as one of the 150 backward districts for implementation of Scheme for Promotion of Women Self Help Groups (WSHG). Eight NGOs, NCUI, Sai Life Care, AIMS, MFG, NV, UGS, SAF, OACA and DRDA, Dept. of Agriculture under watershed programme, KVK, Dept of Women & Child Development, Gram Panchayats, Water Users' Associations, etc, are working in the SHG sector. Under the WSHG Scheme, a total of 387 SHGs have been formed as on 31 March 2017, against which 343 have been savings linked and 191 credit linked.

#### Initiatives taken for expansion of linkage programme:

- 1) NABARD organises training programmes for the Branch Managers of the banks to sensitize them on SHG concepts with a view to increase credit linkage. Training programmes for NGOs are also conducted.
- 2) MEDPs are sanctioned to NGOs / Banks / ATMA with a view to impart training to SHG members on various potential activities in the district.
- 3) Review of the progress of SHG-BLP/WSHG Programme is taken up regularly in BLBC/DLCC Meetings.

#### 11.4. Issues related to micro finance

Certain issues plague the growth of SHG movement in the district. It is observed that many of the groups are formed with the intention of availing Govt. subsidy and cease to be active once the subsidy is availed. Besides, there are certain banks who are reluctant to provide credit to the groups with reasons like insistence on identification of activity for first dose, directly crediting the loan amount to the supplier's account, insistence on presence of all the members while availing loan, seeking KYC at the time of giving loan, providing very meagre amounts as loans despite eligibility, etc., which discourages the groups to avail loans. For providing credit to microfinance, Banks need not insist on these formalities time and again.

Some banks are insisting of PAN card and registration of SHGs. However, it may be clarified here that as the guidelines of RBI / NABARD, group members exceeding 20 only has to be registered and as regards insisting of PAN card for SHGs, Form 60 may be obtained from the SHGs instead of PAN.

#### 11.5. Road map for the future

The district being one of the 150 backward districts identified for implementation of Scheme for Promotion of Women SHGs, there is a need to develop a proper roadmap for extending the outreach and having a meaningful impact of SHG-BLP.

Under the NRLM introduced by the MoRD, GoI, all the women SHGs are eligible for loans upto ₹ 3 lakh @ 7%. Besides, an additional interest subsidy of 3% would be provided for prompt repayments. Accordingly, the effective rate of interest works out to 4% p.a. NRLM has been rolled out under the name '*Streesakthi*' in the district since 2015. Two blocks, Pernem and Bardez were identified as intensive blocks and in 2016 Bicholim block has been added by DRDA.

A comprehensive mapping of status of SHGs in the district is required to assess the active and dormant SHGs. Proactive steps in the form of sensitization of Bankers/NGOs, motivation of SHGs, training for livelihood activities could be taken up vigorously to minimize the credit linkage issues. NRLM and WSHG should be implemented by complementing each other.

**EShakti** project will be launched to cover the entire State for digitizing the SHG data, enable all stakeholders to access data easily, especially paving way for banks to identify eligible SHGs and extend financial services.

The State specific strategy cited at para 11.2 to be rolled out with the active involvement of all stakeholders for strengthening the microfinance movement in the State.

### 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 ‘**EShakti**’ has been launched to infuse vibrancy in the SHGs by digitising 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.

## Chapter 12: Doubling of Farmers Income by 2022

### 12.1. Introduction:

Finance Minister, Hon'ble Shri. Arun Jaitley, in his budget speech on 29<sup>th</sup> February 2016, stated that farmers net income need to be doubled by 2022 by reorienting interventions in the farm and non-farm sectors. He further stated that the doubling strategies should be region-specific given the diversity of agro-climatic conditions in the country and income thus doubled should be adequate enough to neutralise impact of price rise.

Farmers' basket of income is derived primarily from cultivation activities, supplemented by allied activities and non-farm/wage income. National Statistical Survey Organisation (NSSO) estimates show that 48% of income is derived from cultivation, 12% from dairying activities and 40% from non-farm cum wage income. While the share of agriculture to GDP has been coming down the dependence of workers on agriculture sector has not declined. What is required is a diversification plan for farm households backed by a well-enmeshed skilling plan. The Honourable Prime Minister has already outlined the seven major areas of intervention which would lead to doubling of farmers' income.

- 1) Big focus on irrigation with large budgets, with the aim of "*per drop, more crop.*"
- 2) Provision of quality seeds and nutrients based on soil health of each field.
- 3) Large investments in warehousing and cold chains to prevent post-harvest crop losses.
- 4) Promotion of value addition through food processing.
- 5) Creation of a national farm market, removing distortions and e-platform across 585 stations.
- 6) Introduction of a new Crop Insurance Scheme to mitigate risks at affordable cost.
- 7) Promotion of ancillary activities like poultry, beekeeping and fisheries.

GOI has also set up a panel Inter-Ministerial Committee to suggest ways to double farm income by 2022, prepare a blueprint to bring about a transition of farm policies from being production oriented to income or value addition oriented. Some of the interventions suggested by the Prime Minister are already being rolled out in the form of *Krishi Sinchai Yojana*, National Agriculture Market and *Prime Ministers Fasal Bima Yojana*.

### 12.2. State level Status and strategies

The State of Goa comprises of two districts with a total geographical area of 3.61 lakh ha. Against the total area, 35% is under forests and 44% is Gross Cropped Area. The economy of Goa is primarily driven by tourism and mining followed by agriculture and fisheries activities. Agriculture contributes to 3.74% of State GDP while secondary and tertiary sectors comprising of industries and services contribute to 80% of the GDP (@ current prices, 2015).

The latest Agricultural Census report 2010-11 shows that there are 78020 land holdings and the average size of the land holdings is 1.14 ha. 15% of the land holdings and 17% of the area are operated under tenancy and remaining area by wholly owned farmers. Marginal and small land holdings (< 2 ha) constitute 89% of the holdings, but area-wise they constitute only 51% of the total area.

Goa has impressive socioeconomic indicators, as compared to the other states of the Country. The State ranks 4th in the Country with 86% literacy rate as per the 2011 census and has the highest per capita income.

Census reports shows that there are only 31000 cultivators and 27000 agricultural labourers as compared to the total population of 14.58 lakh. 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. It is estimated in the 70<sup>th</sup> round of NSSO that the average income of farmers in Goa is ₹ 91,098 of which ₹ 16,893 is through farming, ₹ 15,097 is through Dairying, ₹ 12,243 through non-farm activities and ₹ 46,865 through wage labour and salary.

Though cultivation income is not a major source of income for farmers, it is imperative to take efforts to more than double their income levels as farming cannot be dispensed with, especially when the

State is dependent on other neighbouring States for all related products, though all natural resources are available aplenty. 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 major interventions in the State.

- 1) Time bound initiatives to increase productivity of major food crops and plantation crops
- 2) Improving the existing irrigation structures through desilting, maintenance, building of check dams and tail end distributaries to increase net irrigated area
- 3) Identify the labour intensive farm operations and provide mechanised solutions and farm implements for farmers to tackle labour availability/cost issues
- 4) Creating value chain supply network – including farm gate procurement networks, storage facilities and direct marketing to consumers.
- 5) Creating avenues for aggregation and value addition for all farm products.
- 6) Technology adoption for diversification, intensification and Integration.

### 12.3. District Level Status and strategies

- 1) North Goa District has five talukas and it is estimated that there are 15,000 cultivators and 14,000 agricultural labourers in the District. There are 45,891 landholdings with total area of 51,375 ha. The average size of land holding is 1.12 ha and 80% of it is below 1 ha. The marginal and small landholdings (<2 ha) constitute 91% of the total land holdings which is 51% of the area of landholdings. The cropping intensity is as low as 121%
- 2) Plantation crops, viz., cashew, arecanut, coconut and food crops like paddy and vegetables are the major agricultural crops in the District.

**Following interventions could bring about doubling of income for farmers in the district.**

- 1) **Large scale promotion of SRI technique followed by pulses cultivation** – SRI has already been successfully demonstrated in three blocks under NABARD assisted programme with production increase ranging from 30% to 40%. The goal now should be to cover the entire district. Since residual moisture would be adequate for a low water intensive short duration crop (especially pulses), suitable varieties need to be promoted.
- 2) **Introduction of SSI technique with drip in sugarcane** – Sugarcane crop fetches assured support price of ₹ 2400/MT and any incremental increase would bring additional income to farmers. SSI with drip system has been successfully proven for increasing productivity in sugarcane in neighbouring states, which can be replicated in Goa.
- 3) **Systematic agronomic interventions for increasing productivity in cashew and coconut** – Cashew fetches the highest market rates for farmers @ ₹ 120 /kg. Traditionally, cashew is treated as barren land crop; with adequate manuring, pest control and irrigation measures, the production could go up to 8 kg/tree from the avg. 2 kg/tree
- 4) **Intercropping in plantation and horticulture:** Intercropping in plantation and horticulture areas will increase land productivity and helps in deriving additional income for farmers.
- 5) **Mechanisation:** Identification and promotion of appropriate transplanting machinery, mechanical conoweeders, threshers for paddy, hole diggers, high compression sprayers for plantation crop.
- 6) **Per drop more crop:** Promoting drip systems to minimise water consumption and to increase production in vegetables, sugarcane and plantation crops. Surveying the irrigation network to assess need for maintenance and build new structures including bund maintenance for ensuring irrigation for second/third crop.
- 7) **Creating labour pool:** Creating a skilled labour pool for coconut tree climbing, tractor driving, machinery maintenance, repairs, etc. Mechanised tree climbing equipments can be tried thereby reducing the labour cost and increasing the income.

- 8) **Value chain network:** Value chain network for aggregation of fruits, storage, grading, packaging and direct marketing, especially for minor fruits like kokum, noni and jackfruit; Creating a value chain in processed chicken, fish and meat products and promoting retailing along with poultry /goat/ piggery farms will improve the income of farmers in allied sector; Focusing on value added marine products, economic utilisation of low value fish and diversification into aquaculture and inland fisheries would increase income of those dependent on fisheries sector.
- 9) Promoting fodder production, feed mixing at farmers level, strengthening veterinary services, improving feed and animal husbandry practices and value addition in dairy sector are required for increasing dairy farmers' income.
- 10) Precision agriculture is one of many modern farming practices that make production more efficient. Precision agriculture practices, to apply nutrients, water, seed, and other agricultural inputs to grow more crops in a wide range of soil environments. By studying these factors and using precision agriculture, farmers can produce more food at a fraction of the cost.
- 11) Hydroponics, helps in increased rate of growth of up to 25% and produce up to 30% more than the plants grown in soil. Both hydroponic fertilizers and those intended for use in soil contain the three major nutrients, nitrogen, phosphorus and potassium. However, in hydroponic fertilizers, they contain proper amounts of all the essential micro-nutrients.
- 12) Beekeeping (apiculture) practice of managing honeybee colonies to attain desired objectives viz., (i) ensure large, healthy adult honeybee populations to coincide with major nectar flows; (ii) use these strong honeybee colonies to best execute the beekeeping management to maximize the collection of nectar (to maximize honey production) and provide pollination services for local food crops. Most important food crops require pollination to produce fruits, nuts and seeds. These crops provide 35% of the calories we consume yearly and most of the vitamins, minerals and antioxidants.

## Chapter 13: Skill India Scheme

### 13.1. Introduction:

The "National Skill Development Mission" was launched on 15th July 2015 with an aim to train over 40 crore people in India in different skills by 2022. It includes various initiatives of the Government like "National Skill Development Mission", "National Policy for Skill Development and Entrepreneurship, 2015", "Pradhan Mantri Kaushal Vikas Yojana (PMKVY)" and setting up Sector Skill Councils under public-private arrangement. 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 of them.

### 13.2. Agriculture Sector Skill

Though Agriculture and allied activities account for only 15.7 % of country's GDP it is estimated to employ about 124.7 million people as cultivators and 106.8 million as agricultural labour (Census 2001). Besides this, agriculture employs 2.15 million in organized and the unorganized sector. While demand for agriculture produce and food products is continuously on the rise, production and productivity are low due to improper farm management practices and loss in post-harvest handling. Considering this, Agriculture Skill Council of India (ASCI) was set up in January 2013 as a Section 25 company under Companies Act to work towards capacity building in agriculture and bridge the gap between laboratories and farms. ASCI envisages to upgrade skills of cultivators, agricultural labours and those engaged in directly /indirectly in the organised and unorganized agriculture and allied industries. ASCI also implements *Pradhan Mantri Kaushal Vikas Yojana (PMKVY)*, a unique initiative by the Government of India that aims to offer 24 lakh Indian youth meaningful, industry relevant, skill based training. Under this scheme, the trainees will be offered a financial reward and a government certification on successful completion of training and assessment, which will help them in securing a job for a better future.

### 13.3. Potential in the District

In North Goa, labour shortage is chronic and the farmers are dependent on neighbouring States like Karnataka, Maharashtra and even as far as Orissa, Bihar and Jharkhand. In major plantation crops like coconut and arecanut, labour is unavailable for doing regular tree maintenance, pest control, fungicide spray and harvesting. Mechanisation, though available to a limited extent is not popular and due to lack of amenability to local conditions. SRI technique, which doubles productivity in paddy is reluctantly taken up due to lack of trained labour for single seedling transplantation. Trained technical hands are unavailable for doing grafting, layering, etc., in horticultural crops, that even the private nurseries merely transport planting materials from outside the State, instead of producing them on farm. Likewise, operation of agricultural machinery as well as simple maintenance suffers due to lack of trained manpower. In Animal husbandry sector too, labour is brought from outside to manage dairy farms. In Fisheries sector, power blocks are being promoted to overcome the problem of labour requirement on trawlers.

At present, there are no training centres affiliated to ASCI as could be seen from the website <http://asci-india.com/National%20Occupation%20Standards.php>. In view of all the above, efforts need to be taken not only to set up a full-fledged ASCI accredited training centre and also to develop a pool of skilled manpower to reduce dependency on other States. Institutions like KVKs, community polytechnics, NGOs with training infrastructure, marketing federations like Goa Bhagayatdar and Adarsh Coop Society could be encouraged to accredit themselves to ASCI to provide the much needed skilled labour.

### 13.4. Skill India relating to Non Agriculture

Skill development is critical for achieving faster, sustainable and inclusive growth on the one hand and providing decent employment opportunities to the growing young population on the other. 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.

To achieve the vision of 'Skilled India', the National Skill Development Mission, (driven by Ministry of Skill Development and Entrepreneurship) was launched by the Hon'ble Prime Minister on 15 July 2015 on the occasion of World Youth Skills Day. The Mission would not only consolidate and coordinate skilling efforts, but also expedite decision making across sectors to achieve skilling at scale with speed and standards. Mission Directorate will be supported by three other institutions, viz., (i) National Skill Development Agency (NSDA) (ii) National Skill Development Corporation (NSDC) and (iii) Directorate General of Training (DGT). Seven sub-missions, viz., (i) Institutional Training (ii) Infrastructure (iii) Convergence (iv) Trainers (v) Overseas Employment (vi) Sustainable Livelihoods (vii) Leveraging Public Infrastructure, have been proposed initially to act as building blocks for achieving overall objectives.

The primary objectives of the National Policy of GoI on Skill Development and Entrepreneurship 2015 is to :

- 1) Create a demand for skilling across the country
- 2) Correct and align skilling with required competencies
- 3) Connect the supply of skilled human resources with sectoral demands
- 4) Certify and assess in alignment with global and national standards and
- 5) Catalyse an ecosystem wherein productive and innovative entrepreneurship germinates, sustains and grows to creation of a more dynamic entrepreneurial economy and more formal wage employment

### **13.5. Status at State level**

In Goa, there are 14 ITIs, 16 vocational training institutes and 31 colleges offering employment oriented professional courses. 10 Govt. ITIs and 2 Private ITIs have been recognised as vocational training providers under NSDC. The Govt. has also enabled vertical mobility for ITI students in diploma and degree courses. The State Govt. is also implementing Goa Youth Rozgar Yojana for unemployed youth, providing capital as well as working capital assistance.

Following a skill gap analysis carried out by the National Skill Development Corporation (NSDC), in the year 2013-14, four vocational sectors, automobile, information technology and information technology-enabled services, healthcare and retail, were introduced in 38 government schools in 2014-15. In 2015-16, 37 more government high schools introduced vocational courses; 11 additional vocational sectors including agriculture, beauty and wellness, apparel, physical education construction, banking financial services and insurance, travel and tourism, hospitality and media and entertainment were introduced. Presently, 4300 students are undergoing training in 15 different vocational sectors, in 75 government high schools with the help of 114 instructors. After training, these students are to be linked with the units in Industrial Estates.

### **13.6. Status at District level**

In North Goa, the major manufacturing sector industries are in chemical, pharmaceutical, automobile & auto repair parts, electrical and electronics, ship building and food and beverages, steel, paper and packaging, rubber, plastics and petroleum products and handicrafts. Hospitality industry is the major services sector activity in Goa. Besides, retail trades, IT, logistics, health care and education are the other service sector activities. The District has 6 ITIs in Govt. sector with a capacity of 2144 students and 3 ITI/related training institutes with capacity of 236 students. There are 25 colleges offering skill based professional courses.

The manufacturing sector requires skill sets in the form of fitters, electricians, machinists, machine grinders, CNC operators, injection moulding operators, mechanics, auto repair mechanics, welders,

etc, while the service sector requires general technicians, housekeepers, stewards, gardeners, kitchen attendants, chefs, cleaners, room attendants, stock managers, supervisors, floor staff, tele-callers, truck drivers, crane operators, loaders, warehouse supervisors, sales personnel, nurses, ambulance drivers, ward boys, etc.

The NSDC skill gap study has estimated the skill gap in manufacturing and service sectors as below:

<b>Incremental Human Resource Requirement - Manufacturing</b>			<b>Incremental Human Resource Requirement –Service sector</b>	
<b>Skill Levels</b>	<b>2012-17</b>	<b>2017-2022</b>	<b>2012-17</b>	<b>2017-2022</b>
Minimally Skilled	4848	6327	9707	11821
Semi-Skilled	11164	14569	14642	19235
Skilled	2302	2680	10610	13492
Total	18314	23576	34960	44548

Considering the skill development capacity available, NSDC has estimated a 12% gap in meeting the skill demand by 2017 as well as 2022. State Govt. has to design a programme for systematically increasing the capacity and orient the skill courses according to the industry needs.

All the training Institutes and vocational training centres in the District may coordinate with the Industries to reorient their training courses and facilitate direct absorption of trainees by the Industries from the campus itself.

Banks can also leverage Credit Guarantee Fund Scheme for Skill Development Loans being managed by National Credit Guarantee Trustee Company Limited, for financing activities associated with skill development.

## **Chapter 14: Climate Change**

### **14.1 Introduction**

Climate change is the most complex and challenging environmental problem facing the world today and is increasingly recognized as a potent threat to agriculture in general and to food security in particular. Although climate change is global in its occurrence and consequences, it is the developing countries like India that face more adverse consequences.

Climate change projections made for India indicate an overall increase in temperature by 1 to 4<sup>0</sup>C and precipitation by 9-16% towards 2050. Another significant aspect of climate change is the increase in the frequency of occurrence of extreme events such as droughts, floods and cyclones. All of these expected changes will have adverse impact on climate sensitive sectors such as agriculture, forest and coastal ecosystems and also on availability of water for different uses and on human health.

### **14.2 Climate Change - Probable effects**

#### **14.2.1 State of Goa**

A TERI (2014) study on 'Climate Resilient Infrastructure Services' examined the Mean Sea Level for a period of 1875-2010 and observed that there is an increasing trend of 1.26mm /year. The result would be not just loss of habitation and livelihood, but also excessive salination of freshwater bodies, rendering the lands uncultivable and the water undrinkable. Sea-level rise can lead to salt water ingress which can damage mangroves and other coastal biodiversity. Salinity in ground water will also rise resulting in corrosion of infrastructure.

Studies have shown that Goa is expected to witness a sea level rise of one metre in the next 100 years. This rise together with extreme rainfall could flood coastal as well as inland Goa. The Energy and Resources Institute (TERI) has been working with the Corporation of the City of Panaji for the past two years under the USAID-sponsored Climate Resilient Infrastructure Services and has partnered with the Goa State Urban Development Agency to prepare a road map for developing a State Urban Climate Resilience Policy.

According to the 'ATLAS on Vulnerability of Indian Agriculture to Climate Change' developed under ICAR supported 'National Initiative on Climate Resilient Agriculture' (NICRA), Goa has been ranked 1<sup>st</sup> 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. The State Govt. is yet to prepare a State Action Plan underlining the Climate changes assessed or expected in future, the sectors that could be affected due to Climate changes, projects that need to be taken as mitigation or adaptation measures, etc. State Level Steering Committee on Climate Change has been constituted to scrutinize and recommend projects for GCF/NACCF funding, based on the State Action Plan, which is yet to be prepared.

While the effect on climate change has been a concern for protecting urban infrastructure, no study has been undertaken till now to assess the change in monsoon pattern and precipitation, changes in temperature and its effect on agriculture and allied sectors. A few observations on sudden drop in cashew and mango production linking it to climate change and the presence of Blue jelly fish and higher sardine catches indicating warming of seas have not yet been studied in detail and established.

#### **14.2.2 North Goa District**

Goa, being an ecologically sensitive coastal district comes under the Coastal Regulation Zone. According to the 'ATLAS on Vulnerability of Indian Agriculture to Climate Change' as per the assessment for 572 Rural districts of the country on vulnerability 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 North 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**

In general, there are two different strategies when it comes to dealing with climate change. Firstly, we have to find ways to live in our warming world (adaptation to climate change) and secondly we have to try to stop future warming (mitigation of climate change). Though Climate change is a global problem, its solutions are at local level. In order to respond to the challenges of Climate Change, India came out with a 'National Action Plan on Climate Change (NAPCC)' that sets out the pursuit of development goals that offer growth with long-term 'climate change co-benefits'.

#### **14.3.1 Climate Change Adaptation**

Adaptation involves developing ways to protect people and places by reducing their vulnerability to climate impacts. For example, 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.

#### **14.3.2 Climate Change Mitigation**

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 CO<sub>2</sub> 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.

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

#### **14.4.1 Adaptation Fund**

The Adaptation Fund was set up to assist developing country Parties that are particularly vulnerable to the adverse effects of climate change to meet the cost of adaptation. India as an eligible country has access to Adaptation Fund and can seek financial support to undertake adaptation activities at National and Regional level. The Fund is to be financed with a share of proceeds from Clean Development Mechanism (CDM) project activities and receive funds from other sources. NABARD has been accredited by the Adaptation Fund Board of UNFCCC as the only National Implementing Entity (NIE) for India. NABARD in the capacity of NIE can access Adaptation Fund from AFB for implementation of feasible climate adaptation projects posed by eligible Executive Entities such as NGOs, Central/State Government Departments, Research Institutions, and Technical Institutions etc.

Bio Diversity Board the Nodal Department for Climate Change in Goa will shortly finalise a Project Concept Note (PCN) on "**Revival and restoration of vulnerable inland riverine and coastal ecosystem**" incorporating the views and suggestions of NABARD and submit it for the recommendation of State Level Standing Committee (SLSC). The PCN covers Traditional Seed conservation through Rice Parks, integrated farming, outlets for organic produce, soft measures to combat sea erosion, etc. NABARD will provide grant support for execution of the project to the tune of ₹ 25.00 crore.

#### **14.4.2 The Green Climate Fund (GCF)**

The 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, taking into account the needs of those developing countries particularly vulnerable to the adverse effects of climate change.

#### **14.4.3 The National Adaptation Fund on Climate Change (NAFCC)**

The National Adaptation Fund on Climate Change (NAFCC) has been established to meet the cost of adaptation to climate change for the State and Union Territories of India that are particularly vulnerable to the adverse effects of climate change. Government has set up a budget provision of ₹ 250 crore for

the year 2015-16 and 2016-17, with an estimated requirement of ₹ 181.5 crore for financial year 2017-18 for NAFCC. The projects under NAFCC prioritizes the needs that builds climate resilience in the areas identified under the SAPCC and the relevant Missions under NAPCC. NABARD has been designated as National Implementing Entity (NIE) for implementation of adaptation projects under NAFCC by Govt. of India.

#### **14.5. Critical interventions required & actions to be initiated**

1. In North Goa district, 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, so that biotic and abiotic stress tolerant varieties could be identified and promoted.
2. Since net irrigated areas is less than 50% in the district, excessive rainfall/unavailability of rains during critical crop growth periods could result in heavy production losses. Micro irrigation structures need to be promoted in plantation crops and adequate care is required in maintenance of drainage structures.
3. Use of Solar energy (Solar irrigation pumpsets, lanterns, cookers, photovoltaic lighting systems etc.) should be promoted on a large scale as a Climate Change mitigation measure, which will lead to drastic reduction in coal/fossil fuel usage. Solar power production projects in public sector or on PPP mode need to be encouraged.
4. In North Goa, coastal stretches have been suffering erosion damage; while flood protection measures need to be taken as preventive measure, 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.
5. A detailed environmental appraisal need to be done to map the assimilative capacity of the environment of the fragile coastal zone of the district.
6. All the Gram panchayats in the district should prepare a 'People's Biodiversity Register' under the Biological Diversity Act, 2002. This will help in documenting local bio-diversity and the communities' traditional knowledge on biodiversity including its conservation and traditional uses.

## 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)**

Govt 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, Govt 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 and Block-wise Physical and Financial Projections - 2018-19

(₹ lakh)

Activity	Unit size	SoF/UC	Tiswadi		Bardez		Pernem		Bicholim		Sattari		Dist Total	
			PU	BL	PU	BL	PU	BL	PU	BL	PU	BL	PU	BL
<b>Agriculture</b>														
<b>FARM CREDIT</b>														
<b>Crop Production, maintenance and marketing</b>														
Paddy (majority HYV kharif)	ha	0.700	3700	2590.00	4400	3080.00	3300	2310.00	2500	1750.00	1000	700.00	14900	10430.00
Pulses	ha	0.400	200	80.00	1800	720.00	2500	1000.00	50	20.00	400	160.00	4950	1980.00
Sugarcane	ha	1.600	0	0.00	50	80.00	50	80.00	50	80.00	100	160.00	250	400.00
vegetables- Rabi and khariff	ha	1.000	800	800.00	500	500.00	900	900.00	700	700.00	300	300.00	3200	3200.00
Misc. (mixed PH crops maint.)	ha	1.500	300	450.00	300	450.00	300	450.00	300	450.00	300	450.00	1500	2250.00
Ground nut	ha	0.600	300	180.00	300	180.00	250	150.00	200	120.00	0	0.00	1050	630.00
<b>Total</b>			5300	4100.00	7350	5010.00	7300	4890.00	3800	3120.00	2100	1770.00	25850	18890.00
Post harvest/ Household/ Consumption requirements (@10% of A)				410.00		501.00		489.00		312.00		177.00		1889.00
Repairs and maintenance expenses of farm assets etc. (@20% of A)				820.00		1002.00		978.00		624.00		354.00		3778.00
<b>Total (1)</b>				<b>5330.00</b>		<b>6513.00</b>		<b>6357.00</b>		<b>4056.00</b>		<b>2301.00</b>	<b>25850</b>	<b>24557.00</b>
<b>FARM CREDIT -TERM LOAN</b>														
<b>Water Resources</b>														
DUG wells (dia 3m, depth 8-10m))	no.	1.60	80	96.00	120	144.00	150	180.00	125	150.00	120	144.00	595	714.00
Pumpsets -5HP, 3 phase, submersible	no.	0.30	80	18.00	120	27.00	150	33.75	125	28.13	120	27.00	595	133.88
Drip irrig. (for coconut)	no.	0.40	50	15.00	220	66.00	250	75.00	200	60.00	250	75.00	970	291.00
Drip irrig. (for banana)	no.	1.00	30	22.50	45	33.75	25	18.75	40	30.00	50	37.50	190	142.50
Sprinkler system - arecanut	no.	0.50	25	9.38	65	24.38	75	28.13	65	24.38	90	33.75	320	120.00
Small LIS (pumpsets, pipes)	no.	1.30	15	14.63	25	24.38	45	43.88	25	24.38	20	19.50	130	126.75
Deepening of existing wells- 30% of well construction cost	no.	0.50	40	15.00	60	22.50	60	22.50	65	24.38	60	22.50	285	106.88
Misc. works	no./ha			50.00		45.00		50.00		45.00		50.00	0	240.00
<b>Sub Total</b>				<b>240.50</b>		<b>387.00</b>		<b>452.00</b>		<b>386.25</b>		<b>409.25</b>	<b>3085.00</b>	<b>1875.00</b>

<b>Farm Mechanisation</b>														
Tractor ( 40-45 HP) with trolley ( 3 tonne mechanically operated)	no.	6.75	20	101.25	20	101.25	20	101.25	20	101.25	20	101.25	100	506.25
Power tillers (8 HP and above)	no.	1.55	55	63.94	65	75.56	50	58.13	60	69.75	75	87.19	305	354.56
Rice transplanters -4 wheel self propelled	no.	11.00	1	8.25	1	8.25	1	8.25	1	8.25		0.00	4	33.00
Rice transplanters - manual operated	no.	2.50	3	5.63	4	7.50	3	5.63	4	7.50	3	5.63	17	31.88
Combine harvesters	no.	24.00	2	36.00	2	36.00	2	36.00	2	36.00	2	36.00	10	180.00
Agrl. Implement -sprayers	no.	0.05	65	2.44	65	2.44	75	2.81	65	2.44	55	2.06	325	12.19
Agrl. implements -weeders	no.	0.40	65	19.50	65	19.50	64	19.20	63	18.90	63	18.90	320	96.00
Agrl. implements -motorised threshers	no.	0.40	55	16.50	65	19.50	64	19.20	63	18.90	70	21.00	317	95.10
Agrl. implements –others (rotavator, coconut dehusker, MB plough, areca peeler, cashew pulper, etc)	no.	0.95	250	178.13	350	249.38	250	178.13	200	142.50	250	178.13	1300	926.25
<b>Sub Total</b>				<b>431.63</b>		<b>519.38</b>		<b>428.59</b>		<b>405.49</b>		<b>450.15</b>	<b>2698</b>	<b>2235.23</b>
<b>4. Plantation /Horticulture</b>														
Cashew -new plantation	ha	1.23	100	92.25	200	184.50	200	184.50	250	230.63	300	276.75	1050	968.63
Cashew-rejuvenation	ha	0.40	75	22.50	250	75.00	250	75.00	300	90.00	400	120.00	1275	382.50
Coconut -new plantation	ha	2.00	90	135.00	120	180.00	100	150.00	120	180.00	95	142.50	525	787.50
Coconut -hybrid	ha	2.50	10	18.75	25	46.88	40	75.00	50	93.75	40	75.00	165	309.38
Mango	ha	2.00	35	52.50	55	82.50	25	37.50	45	67.50	120	180.00	280	420.00
Oilpalm	ha	1.00	5	3.75	10	7.50	10	7.50	10	7.50	70	52.50	105	78.75
Arecanut	ha	2.70	10	20.25	25	50.63	25	50.63	30	60.75	50	101.25	140	283.50
Spices (pepper as a mixed crop)	ha	1.05	50	39.38	60	47.25	50	39.38	75	59.06	80	63.00	315	248.06
Spices- nutmeg (sole crop)	ha	0.90	10	6.75	25	16.88	30	20.25	35	23.63	40	27.00	140	94.50
Vegetables (exotic-low cost under polyhouse condition)-1000 sqm	ha	11.00	3	24.75	3	24.75	3	24.75	3	24.75	3	24.75	15	123.75
Vegetables (shadenet)-1000 sqm	ha	4.00	6	18.00	8	24.00	8	24.00	8	24.00	6	18.00	36	108.00
Floriculture (gerbera under polyhouse condition)-560 sqm	ha	8.50	3	19.13	3	19.13	4	25.50	3	19.13	4	25.50	17	108.38
Others (kokum, cocoa & other innovative activities)	ha	3.00	20	45.00	35	78.75	30	67.50	25	56.25	25	56.25	135	303.75
Nursery-PH planting matl. and ornamental-2000sqm	ha	3.25	6	14.63	9	21.94	9	21.94	8	19.50	10	24.38	42	102.38
Oyster Mushroom(800 kg cycle)	no.	2.10	3	4.73	3	4.73	3	4.73	3	4.73	3	4.73	15	23.63
Homestead farming -1000sqm	no.	0.50	50	18.75	60	22.50	20	7.50	22	8.25	20	7.50	172	64.50
<b>Sub Total</b>				<b>536.10</b>		<b>1547.25</b>		<b>815.66</b>		<b>1447.58</b>		<b>1199.10</b>	<b>4427.00</b>	<b>4407.19</b>

<b>Forestry and Waste Land Development</b>														
Teak	ha	0.70	0	0.00	0	0.00	32	16.80	0	0.00	32	16.80	64	33.60
Bamboo	ha	0.80	0	0.00	0	0.00	30	18.00	0	0.00	30	18.00	60	36.00
<b>Sub Total</b>				<b>0.00</b>		<b>0.00</b>		<b>34.80</b>		<b>0.00</b>		<b>34.80</b>	<b>124.00</b>	<b>69.60</b>
<b>AH- Dairy</b>														
CB Cows ( 2 animal unit)	no.	1.75	400	525.00	500	656.25	550	721.88	450	590.63	570	748.13	2470	3241.88
Graded Buffaloes (2 animal unit)	no.	1.75	155	203.44	140	183.75	160	210.00	150	196.88	160	210.00	765	1004.06
Calf rearing (5 animal unit)	no.	3.00	60	135.00	100	225.00	100	225.00	100	225.00	100	225.00	460	1035.00
Mini Dairy (10 animal unit)	no.	8.00	40	240.00	60	360.00	70	420.00	60	360.00	80	480.00	310	1860.00
community dairy( 100 animals)	no.	100.00	1	75.00	1	75.00	1	75.00	1	75.00	1	75.00	5	375.00
Misc. (equipments, shed repair, shed extension, etc.)	no.	0.50	80	30.00	100	37.50	100	37.50	100	37.50	100	37.50	480	180.00
<b>Sub Total</b>				<b>1208.44</b>		<b>1537.50</b>		<b>1689.38</b>		<b>1485.00</b>		<b>1775.63</b>	<b>4490</b>	<b>7695.94</b>
<b>AH- Poultry</b>														
Layers 2000 birds	no.	8.00	6	36.00	6	36.00	6	36.00	8	48.00	10	60.00	36	216.00
Broilers 1000 birds	no.	2.40	15	27.00	15	27.00	15	27.00	20	36.00	15	27.00	80	144.00
Rural back yard poultry 100 birds	no.	0.30	75	16.88	75	16.88	70	15.75	85	19.13	85	19.13	390	87.75
Open cage transport vehicle	no.	8.00	3	18.00	2	12.00	2	12.00	2	12.00	2	12.00	11	66.00
Egg / broiler cart	no.	0.10	8	0.60	10	0.75	6	0.45	9	0.68	7	0.53	40	3.00
Misc(hatchery, feed Mill)	no.	24.00	1	18.00	1	18.00	1	18.00	1	18.00	1	18.00	5	90.00
<b>Sub Total</b>				<b>116.48</b>		<b>110.63</b>		<b>109.20</b>		<b>133.80</b>		<b>136.65</b>	<b>562.00</b>	<b>606.75</b>
<b>AH - Sheep/Goat/Piggery</b>														
Pig rearing (4+1 unit) with shed	no.	3.20	10	24.00	10	24.00	10	24.00	10	24.00	10	24.00	50	120.00
Goat Rearing (18+2 unit with shed)	no.	1.70	5	6.38	10	12.75	20	25.50	20	25.50	20	25.50	75	95.63
Misc (Shed repair, extn, etc)	no.	0.25	10	1.88	10	1.88	20	3.75	10	1.88	10	1.88	60	11.25
<b>Sub Total</b>				<b>32.25</b>		<b>38.63</b>		<b>53.25</b>		<b>51.38</b>		<b>51.38</b>	<b>185</b>	<b>226.88</b>
<b>Fisheries</b>														
Trawler replacement-wooden (along with engine+power block)	no.	53.00	14	556.50	3	119.25	0	0.00	0	0.00	0	0.00	17	675.75
Mechanization of canoes- Out Board Motors	no.	1.60	35	42.00	40	48.00	15	18.00	0	0.00	0	0.00	90	108.00
Fiber Boats (motorized)	no.	2.20	30	49.50	34	56.10	14	23.10	0	0.00		0.00	78	128.70
Repair & maintenance of vessels (0.50 lakh for trawlers, 0.20 lakh for mech.boats and 0.05 lakh for non-mech. Boats)	no.			204.75		102.50		31.40	0	0.00	0	2.00	0	340.65
GPS, fish finder, search beacon	no.	1.50	70	78.75	85	95.63	35	39.38	0	0.00		0.00	190	213.75
Misc. (net purchase, search beacon/ light, etc.)	no.			37.00		39.00		25.00		10.00		5.00	0	116.00
Fresh water fish culture/ha	ha	5.50	2	8.25	2	8.25		0.00	2	8.25		0.00	6	24.75
Ornamental fish rearing	no.	3.00	3	6.75	3	6.75	3	6.75	3	6.75	3	6.75	15	33.75

Mussel culture	no.	0.50	4	1.50	4	1.50	2	0.75		0.00		0.00	10	3.75
Mudcrab culture	no.	7.50	2	11.25	2	11.25	2	11.25		0.00		0.00	6	33.75
Brackish water fish culture	no.	11.30	2	16.95	2	16.95		0.00	1	8.48		0.00	5	42.38
<b>Sub Total</b>				<b>1013.20</b>		<b>505.18</b>		<b>155.63</b>		<b>33.48</b>		<b>13.75</b>	<b>417.00</b>	<b>1721.23</b>
<b>Others - Agri and allied activities</b>														
Bullocks& draught animals	no.	0.75	12	6.75	12	6.75	16	9.00	16	9.00	12	6.75	68	38.25
Bullock carts	no.	0.22	4	0.66	6	0.99	8	1.32	8	1.32	5	0.83	31	5.12
Farm vehicles- pick up vans	no.	6.50	10	48.75	10	48.75	10	48.75	10	48.75	10	48.75	50	243.75
Loans to SF/MF for purchase of land for agricultural purposes	acre	1.00	50	45.00	40	36.00	50	45.00	40	36.00	50	45.00	230	207.00
Agriculture -others.( Gold loan and other misc. loans for Agri/allied)	no.			1200.00		1125.00		1000.00		950.00		900.00	0	5175.00
<b>Sub Total</b>				<b>1301.16</b>		<b>1217.49</b>		<b>1104.07</b>		<b>1045.07</b>		<b>1001.33</b>	<b>379.00</b>	<b>5669.12</b>
<b>Total Farm credit</b>				<b>10209.75</b>		<b>12376.04</b>		<b>11199.57</b>		<b>9044.03</b>		<b>7373.03</b>	<b>42217.00</b>	<b>49063.92</b>
<b>Agri Infrastructure - Storage Facilities</b>														
Cold storages (1000 tonnes)	no.	65.00	0	0.00	1	48.75	0	0.00	1	48.75	1	48.75	3	146.25
Market yards	no.	225.00		0.00		0.00	1	168.75	1	168.75		0.00	2	337.50
Godowns (100 tonnes)	no.	4.00	1	3.00	1	3.00	1	3.00	1	3.00	1	3.00	5	15.00
Small milk chilling (1000 litres)	no.	5.50	1	4.13	1	4.13	1	4.13	1	4.13	2	8.25	6	24.75
<b>Sub Total</b>				<b>7.13</b>		<b>55.88</b>		<b>175.88</b>		<b>224.63</b>		<b>60.00</b>	<b>16</b>	<b>523.50</b>
<b>Agri Infrastructure -Land Development, Soil conservation and watershed development</b>														
Land levelling and OFD	ha	0.78	400	234.00	650	380.25	800	468.00	650	380.25	800	468.00	3300	1930.50
Reclamation	ha	0.25	180	33.75	150	28.13	250	46.88	100	18.75	300	56.25	980	183.75
Water storage structure	nos.	0.70	75	39.38	90	47.25	70	36.75	55	28.88	70	36.75	360	189.00
<b>Sub Total</b>				<b>307.13</b>		<b>455.63</b>		<b>551.63</b>		<b>427.88</b>		<b>561.00</b>	<b>4640.00</b>	<b>2303.25</b>
<b>Agri Infrastructure - Others</b>														
Composting-vermi (150t/ann)	nos.	3.20	3	7.20	4	9.60	3	7.20	4	9.60	3	7.20	17	40.80
Composting-NADEP(40 t/ann)	nos.	1.16	5	4.35	25	21.75	20	17.40	20	17.40	20	17.40	90	78.30
Biofertilizers - 50 T/annum	nos.	40.50	1	30.38		0.00		0.00	1	30.38		0.00	2	60.75
Misc ( fencing, repairing bunds,etc)	nos.			50.00		55.00		35.00		45.00		35.00	0	220.00
<b>Sub Total</b>				<b>91.93</b>		<b>86.35</b>		<b>59.60</b>		<b>102.38</b>		<b>59.60</b>	<b>109.00</b>	<b>399.85</b>
<b>Total Agri Infrastructure</b>				<b>406.18</b>		<b>597.85</b>		<b>787.10</b>		<b>754.88</b>		<b>680.60</b>	<b>4765.00</b>	<b>3226.60</b>
<b>Agri -Ancillary activities</b>														
<b>Agri - ancillary Food and Agro processing</b>														
Rice mill 4800 MT/annum	nos.	76.00	1	57.00		0.00		0.00		0.00	1	57.00	2	114.00
Poha/Murmura - 450 TPA	nos.	7.00	3	15.75	3	15.75	3	15.75	3	15.75	3	15.75	15	78.75
Flour mill-280TPA	nos.	2.79	4	8.37	4	8.37	4	8.37	4	8.37	4	8.37	20	41.85
Bakery units - 80 TPA	nos.	8.00	8	48.00	6	36.00	5	30.00	5	30.00	4	24.00	28	168.00
Coconut oil mill 90 MT/annum	nos.	20.00	4	60.00	4	60.00	4	60.00	4	60.00	4	60.00	20	300.00

Mango/other fruits processing-300MT/annum	nos.	80.00	1	60.00	1	60.00	1	60.00	1	60.00	1	60.00	5	300.00
Kokum Process -72 TPA	nos.	5.00	1	3.75	2	7.50	2	7.50	2	7.50	3	11.25	10	37.50
Cashew Processing 50 TPA	nos.	8.00	2	12.00	5	30.00	5	30.00	5	30.00	5	30.00	22	132.00
Cashew Processing - 500 MT/annum	nos.	162.00		0.00		0.00	1	121.50		0.00	1	121.50	2	243.00
Fish/milk/meat processing 200TPA	nos.	90.00	1	67.50	1	67.50	1	67.50	1	67.50	1	67.50	5	337.50
<b>Sub Total</b>				<b>332.37</b>		<b>285.12</b>		<b>400.62</b>		<b>279.12</b>		<b>455.37</b>	<b>129</b>	<b>1752.60</b>
<b>Ancillary - Others</b>														
Loans to Coop Societies			1	25.00	2	25.00	1	25.00	1	25.00	1	25.00	6	125.00
Loans to PACS			1	200.00	1	20.00	1	20.00	1	20.00	1	20.00	5	280.00
ACABCs		10.00	1	7.50	1	7.50		0.00	1	7.50		0.00	3	22.50
<b>Sub Total</b>				<b>232.50</b>		<b>52.50</b>		<b>45.00</b>		<b>52.50</b>		<b>45.00</b>	<b>14</b>	<b>427.50</b>
<b>Total Agri Ancillary</b>				<b>564.87</b>		<b>337.62</b>		<b>445.62</b>		<b>331.62</b>		<b>500.37</b>		<b>2180.10</b>
<b>Total Agriculture(14-15)</b>				<b>11180.79</b>		<b>13311.51</b>		<b>12432.29</b>		<b>10130.53</b>		<b>8554.00</b>		<b>54470.62</b>
<b>MSME - Manufacturing Sector Enterprises</b>														
<b>Term Loan</b>														
MSME - Manuf-MICRO	no.	11.00	400	3300.00	400	3300.00	450	3712.50	250	2062.50	320	2640.00	1820	15015.00
MSME - Manuf-Small	no.	175.00	45	5906.25	40	5250.00	20	2625.00	20	2625.00	15	1968.75	140	18375.00
MSME - Manuf- Medium	no.	1500.00	5	5625.00	4	4500.00	3	3375.00	4	4500.00	5	5625.00	21	23625.00
<i>Sub Total</i>			<i>450</i>	<i>14831.25</i>	<i>444</i>	<i>13050.00</i>	<i>473</i>	<i>9712.50</i>	<i>274</i>	<i>9187.50</i>	<i>340</i>	<i>10233.75</i>	<i>1981</i>	<i>57015.00</i>
<b>MSME - Services Sector Enterprises</b>														
MSME - Services - MICRO		7.00	600	3150.00	700	3675.00	450	2362.50	250	1312.50	320	1680.00	2320	12180.00
MSME - Services - Small		100.00	50	3750.00	40	3000.00	20	1500.00	20	1500.00	10	750.00	140	10500.00
MSME - Services - Medium		400.00	1	300.00	4	1200.00	3	900.00	5	1500.00	4	1200.00	17	5100.00
<b>Sub Total</b>			<i>651</i>	<i>7200.00</i>	<i>744</i>	<i>7875.00</i>	<i>473</i>	<i>4762.50</i>	<i>275</i>	<i>4312.50</i>	<i>334</i>	<i>3630.00</i>	<i>2477</i>	<i>27780.00</i>
<b>MSME - Manufact. Sector--WC</b>	<i>no.</i>													
MSME - Manuf-MICRO				<i>4190.00</i>		<i>4190.00</i>		<i>4730.00</i>		<i>2580.00</i>		<i>3300.00</i>		<i>18990.00</i>
MSME - Manuf-Small				<i>7580.00</i>		<i>6730.00</i>		<i>3310.00</i>		<i>3310.00</i>		<i>2420.00</i>		<i>23350.00</i>
MSME - Manuf- Medium				<i>7210.00</i>		<i>5750.00</i>		<i>4290.00</i>		<i>5750.00</i>		<i>7200.00</i>		<i>30200.00</i>
<b>MSME - Service sector - WC</b>														
MSME - Service MICRO	no.			<i>5860.00</i>		<i>6840.00</i>		<i>4390.00</i>		<i>2440.00</i>		<i>3120.00</i>	0	<i>22650.00</i>
MSME - Service -SMALL	no.			<i>6980.00</i>		<i>5580.00</i>		<i>2790.00</i>		<i>2790.00</i>		<i>1400.00</i>	0	<i>19540.00</i>
MSME - Service -MEDIUM				<i>560.00</i>		<i>2230.00</i>		<i>1670.00</i>		<i>2790.00</i>		<i>2225.00</i>		<i>9475.00</i>
<b>Sub Total</b>			<i>0</i>	<i>13400.00</i>	<i>0</i>	<i>14650.00</i>	<i>0</i>	<i>8850.00</i>	<i>0</i>	<i>8020.00</i>	<i>0</i>	<i>6745.00</i>	<i>0</i>	<i>51665.00</i>
<b>Total</b>				<b>54411.25</b>		<b>52245.00</b>		<b>35655.00</b>		<b>33160.00</b>		<b>33528.75</b>		<b>209000.00</b>
<b>Other Priority sector</b>														
<b>17. Export credit</b>		400	28	11200.00	19	7600.00	20	8000.00		0.00		0.00	67	26800.00
<b>18. Education</b>														
Education loans	no.	10	900	6750.00	800	6000.00	700	5250.00	650	4875.00	650	4875.00	3700	27750.00
<b>19. Housing</b>														

Housing loans	no.	20	850	12750.00	750	11250.00	580	8700.00	575	8625.00	550	8250.00	3305	49575.00
Housing loans- repairs	no.	2.00	350	525.00	250	375.00	200	300.00	200	300.00	200	300.00	1200	1800.00
<b>Sub total</b>			<b>1200</b>	<b>13275.00</b>	<b>1000</b>	<b>11625.00</b>	<b>780</b>	<b>9000.00</b>	<b>775</b>	<b>8925.00</b>	<b>750</b>	<b>8550.00</b>	<b>4505</b>	<b>51375.00</b>
<b>Renewable Sources of Energy and Waste Utilisation</b>														
(A)Solar water heaters														
100 LPD	no.	0.22	22	3.63	30	4.95	24	3.96	25	4.13	21	3.47	122	20.13
200 LPD	no.	0.44	55	18.15	45	14.85	25	8.25	20	6.60	20	6.60	165	54.45
300 LPD		0.66	5	2.48	5	2.48	5	2.48	5	2.48	5	2.48	25	12.38
400 LPD		0.88	5	3.30	2	1.32	1	0.66	1	0.66	1	0.66	10	6.60
500 LPD		0.99	8	5.94	4	2.97	5	3.71	4	2.97	4	2.97	25	18.56
(B) Solar street light systems	no.	0.27	25	5.06	25	5.06	20	4.05	20	4.05	20	4.05	110	22.28
(C) Solar Home Lighting System (SHLS)														
a) Model -I ( 40 Wp)	no.	0.20	10	1.50	10	1.50	12	1.80	12	1.80	12	1.80	56	8.40
b) Model -DC (150Wp)	no.	0.30	12	2.70	12	2.70	12	2.70	12	2.70	12	2.70	60	13.50
Solar irrig. Pumps-3 HP	no.	5.13	1	3.85	3	11.54	4	15.39	3	11.54	4	15.39	15	57.71
Biogas plant	no.	0.30	10	2.25	35	7.88	55	12.38	50	11.25	70	15.75	220	49.50
Biomass briquetting machines	n0.	4.00	3	9.00	4	12.00	3	9.00	4	12.00	4	12.00	18	54.00
<b>Sub Total</b>				<b>57.86</b>		<b>67.25</b>		<b>64.37</b>		<b>60.17</b>		<b>67.86</b>	<b>826.00</b>	<b>317.51</b>
<b>Others</b>														
Eco-tourism units	no.	20.00			4	60.00	4	60.00	4	60.00	4	60.00	16	240.00
SHG loans( group loan)	no.	1.50	150	200.00	250	375.00	300	450.00	350	525.00	300	450.00	1350	2000.00
JLG loans( group Loan)	no.	1.50	120	180.00	150	225.00	250	375.00	250	375.00	200	300.00	970	1455.00
PMJDY loans	no.	0.05	200	10.00	200	10.00	200	10.00	200	10.00	200	10.00	1000	50.00
<b>Sub Total</b>				<b>390.00</b>		<b>670.00</b>		<b>895.00</b>		<b>970.00</b>		<b>820.00</b>	<b>3336</b>	<b>3745.00</b>
<b>Social Infrastructure</b>														
Construction of toilet blocks in individual homes	no.	1.30	750	731.25	550	536.25	450	438.75	450	438.75	500	487.50	2700	2632.50
School toilet blocks and drinking water facility	no.	20.00	10	150.00	5	75.00	10	150.00	10	150.00	15	225.00	50	750.00
Transport vehicles in health sector (emergency vehicles , hearse vans, etc)	no.	15.00	2	22.50	2	22.50	2	22.50	2	22.50	2	22.50	10	112.50
paper and plastic waste recycling unit	no.	19.71	9	133.05	9	133.05	7	103.49	6	88.70	6	88.70	37	547.00
Waste disposal by composting/biogas units in hotels and bakeries	no.	2.00	50	75.00	40	60.00	30	45.00	30	45.00	30	45.00	180	270.00
<b>Sub Total</b>				<b>1111.80</b>		<b>826.80</b>		<b>759.74</b>		<b>744.95</b>		<b>868.70</b>		<b>4312.00</b>
<b>GRAND TOTAL ( Total Priority sector)</b>				<b>98376.70</b>		<b>92345.56</b>		<b>72056.40</b>		<b>58865.65</b>		<b>57264.31</b>		<b>377770.12</b>

**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)

Sr. No.	Agency/Category	2014-15		2015-16		2016-17		2017-18
		Tar	Ach	Target	Ach	Target	Ach	Target
1	<b>Crop Loan</b>							
	CBs	20720.20	5169.28	17290.99	14913.61	16080.00	16300.00	17327.67
	CCB	3859.99	2265.09	4775.89	1165.56	0.00	0.00	5155.35
	Others	41.51		270.00	366.81	4020.00	679.00	0.00
	<b>Sub Total (A)</b>	24621.70	7434.37	22336.88	16445.98	20100.00	16979.00	22483.02
2	<b>Term Loan (MT+TL) (Incl. Agri Infra, Agri Ancillary)</b>							
	CBs	15775.89	12961.42	14680.58	9607.26	18069.60	20084.00	20707.57
	CCB	5136.29	3826.93	5730.49	2477.34	0.00	0.00	7921.03
	Others	70.26	859.85	141.42	196.96	4517.40	837.00	0.00
	<b>Sub Total (B)</b>	20982.44	17648.20	20552.49	12281.56	23015.00	20921.00	28628.60
3	<b>Total Agri Credit</b>							
	CBs	36496.09	18130.70	31971.57	24520.87	34149.60	36384.00	38035.24
	CCB	8996.28	6092.02	10506.38	3642.90	0.00	0.00	13076.38
	Others	111.77	859.85	411.42	563.77	8537.40	1516.00	0.00
	<b>Sub Total (C)</b>	45604.14	25082.57	42889.37	28727.54	45498.00	37900.00	51111.62
4	<b>MSME</b>							
	CBs	39296.37	20978.81	33863.97	49131.75	126368.00	146476.00	182618.50
	CCB	1260.20	135.94	1155.20	102.13	0.00	0.00	6246.93
	Others	2122.55	1476.12	1617.06	1792.89	34592.00	6103.00	8159.75
	<b>Sub Total (E)</b>	42679.12	22590.87	36636.23	51026.77	157960.00	152579.00	197025.18
5	<b>Other Priority Sector</b>							
	CBs	109319.33	155796.27	114660.38	117616.56	83910.40	36178.00	81984.78
	CCB	14816.87	16693.37	12705.28	12461.59		0.00	10138.38
	Others	32372.12	26642.90	29297.87	20562.26	20977.60	1507.00	12439.18
	<b>Sub Total (F)</b>	156508.32	199132.54	156663.53	150640.41	104888.00	37685.00	104562.34
6	<b>Grand Total</b>							
	CBs	185111.79	194905.78	180495.92	191269.18	244428.00	219037.00	302638.52
	CCB	25073.35	22921.33	24366.86	16206.62	0.00	0.00	29461.69
	Others	34606.44	28978.87	31326.35	22918.92	61107.00	9127.00	20598.93
	<b>Grand Total (D+E+F)</b>	244791.58	246805.98	236189.13	230394.72	305535.00	228164.00	352699.14

**Annexure III: Sub-sector-wise and Agency-wise Credit Flow under Agriculture and Allied Activities  
2014-15, 2015-16 and target for 2016-17**

(₹ lakh)

S.No	Activity	2014-15				2015-16				2016-17			
		CBs	SCB	OTH	Total	CBs	SCB	OTH	Total	CBs	SCB	OTH	Total
1	Crop Loans	5169.28	2265.09	0	7434.37	14913.61	1165.56	366.81	16445.98	17327.67	5155.35	0.00	22483.02
	<b>Investment Credit</b>									Sub-Sector data is not available with SLBC revising MIS as per revised RBI priority sector lending norms			
2	Water Resources	292.37	91.46	0	383.83	297.37	52.07		349.44	Sub sector data not available			
3	Land Development	2424.05	155.12	0	2579.17	1306.18	55.39		1361.57				
4	Farm Mechanisation	754.26	583.33	0	1337.59	479.33	670.34		1149.67				
5	Plantation & Horticulture	889.95	1562.92	0	2452.87	481.24	713.59		1194.83				
6	Forestry	64.58	0	0	64.58	247.22	570.47		817.69				
7	AH-Dairy	624.65	795.64	0	1420.29	1.01	307.33		308.34				
8	AH-Poultry	10.1	377.71	0	387.81	27			27				
9	AH-Sheep/Goat/Piggery	17.91	0.58	0	18.49	330.73	104.69		435.42				
10	Fisheries	252.88	170.2	0	423.08	53.6	0.49		54.09				
11	Storage & Market yard	171.4	0	0	171.4	32.36			32.36				
12	Renewable Energy	0	0	0	0				0				
13	Others	7459.27	89.97	859.85	8409.09	6351.22	2.97	196.96	6551.15				
14	<b>Total (2 - 13)</b>	<b>12961.42</b>	<b>3826.93</b>	<b>859.85</b>	<b>17648.2</b>	<b>9607.26</b>	<b>2477.34</b>	<b>196.96</b>	<b>12281.56</b>				
	<b>Grand Total (1 + 14)</b>	<b>18130.7</b>	<b>6092.02</b>	<b>859.85</b>	<b>25082.57</b>	<b>24520.87</b>	<b>3642.9</b>	<b>563.77</b>	<b>28727.54</b>	<b>38035.24</b>	<b>13076.38</b>	<b>0.00</b>	<b>51111.62</b>

**Annexure IV: Indicative Unit Costs for major activities in the district as arrived at by NABARD for its internal use**

<b>I. Minor Irrigation</b>				
<b>Sr. No.</b>	<b>Item of Investment</b>	<b>Specifications</b>	<b>Unit cost (₹)</b>	<b>Remarks</b>
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 microtubes, connectors, endplugs, 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	
<b>II. Land Development</b>				
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 ₹ 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	@ ₹ 15000/6T/annum
5	Composting (vermicompost) -150 TPA		300000	@ ₹ 2000/T/annum
<b>III. Farm mechanisation</b>				
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
<b>IV. Plantation and Horticulture</b>				
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 4-5 years
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 - ₹ 935 per sqm and planting material cost – ₹ 105/sqm
10	Floriculture (poly house of 560 sqm - Gerbera)		813000	Polyhouse cost - ₹ 935 per sqm and planting material cost – ₹ 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	
<b>V. Forestry</b>				
1	Teak /ha		64,000	
2	Bamboo /ha		72,000	
<b>VI. Animal Husbandry – Dairy Development</b>				
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	
<b>VII. Animal Husbandry – Poultry Development</b>				
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
<b>VIII. Animal Husbandry – Goat and Piggery Development</b>				
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	
<b>IX. Fisheries</b>				
1	Trawler replacement-wooden/ steel hull (along with engine and power block) -length not exceeding 60 feet.		5250000	
3	Mechanisation 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	
<b>X. Storage Godowns and Market yards</b>				
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	
<b>XI. Renewable sources of energy -Biogas</b>				
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 2018-19****Amount in ₹**

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)	Areca nut (Per plant)	400	400	1000	12 months from the date of disbursement
10(b)	Areca nut (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 (i): 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	Pernem	NA	0	30	0	225	350
2	Sattari	NA	0	20	0	150	250
3	Bardez	NA	0	20	0	220	350
4	Tiswadi	NA	0	20	0	150	200
5	Bicholim	NA	0	25	0	225	350
	<b>Dist. Total</b>	<b>3800</b>	<b>0</b>	<b>115</b>	<b>0</b>	<b>970</b>	<b>1500</b>

Though there is no potential in the district, under WSHG Scheme it is proposed to identify left out pockets in the blocks and cover them

**Annexure VI (ii): Block wise potential for credit linkage of SHGs/JLGs**

(₹ lakh)

Sl. No.	Name of the block	No. of SHGs (credit linked) as on 31 Mar 2017	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	Pernem	NA	30	15	235	352.50	70	87.50	85	106.25	30	45.00	245	367.50	72	108.00	95	142.50
2	Sattari	NA	20	10	130	195.00	60	75.00	70	87.50	25	37.50	235	352.50	63	94.50	90	135.00
3	Bardez	NA	20	10	320	480.00	80	100.00	75	93.75	35	52.50	145	217.50	85	127.50	90	135.00
4	Tiswadi	NA	20	10	325	487.50	20	25.00	60	75.00	30	45.00	335	502.50	50	75.00	85	127.50
5	Bicholim	NA	25	10	235	352.50	70	87.50	80	100.00	30	45.00	240	360.00	80	120.00	90	135.00
	<b>Dist. Total</b>	<b>1413</b>	<b>115</b>	<b>55</b>	<b>1245</b>	<b>1867.50</b>	<b>300</b>	<b>375.00</b>	<b>370</b>	<b>462.50</b>	<b>150</b>	<b>225.00</b>	<b>1200</b>	<b>1800.00</b>	<b>350</b>	<b>525.00</b>	<b>450</b>	<b>675.00</b>

Average loan @ ₹ 1.50 lakh per SHG is considered; Average loan @ ₹ 1.50 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	National Producers Organisation Fund
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
GHRSSIDC	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