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**NORTH EASTERN DEVELOPMENT
FINANCE CORPORATION LTD. (NEDFi)
DISPUR, GUWAHATI-ASSAM**



**MASTER PLAN FOR INTEGRATED DEVELOPMENT OF
AGRICULTURE AND ALLIED SECTORS IN ARUNACHAL PRADESH**

FINAL REPORT-VOL - I



वाष्कोस लिमिटेड
WAPCOS LIMITED

(भारत सरकार का उपक्रम)

जल संसाधन, नदी विकास और गंगा संरक्षण मंत्रालय
(A Government of India Undertaking)

Ministry of Water Resources, River Development & Ganga Rejuvenation

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JANUARY-2019

EXECUTIVE SUMMARY

TITLE OF THE STUDY

MASTER PLAN FOR AGRICULTURE AND ALLIED SECTORS-ARUNACHAL PRADESH

The Master Plan for Integrated Development of Agriculture and Allied Sectors in Arunachal Pradesh is being formulated by keeping in view the outcome of a comprehensive study undertaken on unique status of Arunachal Pradesh, its agro climatic situation, eco system, un-measurable bio diversity, aspirations of the people, social and traditional strength and above all, every issue associated with economic development of the highlanders of the state as a whole. The entire exercise is aimed at bringing dynamism and vibrancy in to the systems associated with development of agriculture sector encompassing crops, animals, fishes and so on. It is a sectoral approach comprising horticulture, agriculture, water resources, animal husbandry, fishery and plantation crops namely tea and rubber. This study was undertaken under Techno Economic Development Fund (TEDF) of NEDFi.

The entire game plan is target specific i.e. the target group of farmers and farm women in each district followed by various strategies for their empowerment. As the farmer specific initiatives starts, next comes the sectoral support needed in both ways – linking farmers with most potential sector for them and secondly encouraging their age old unique practice of integrated farming system. At this point it has become imperative to see how technology backup can be streamlined for the benefit of the target group – residing even in difficult terrain of the hilly state. Finally, as market dictates farmer's economy, a market oriented exercise became an integral part of the master plan in case of all the sectors.

The Master Plan is structured in two volumes. The first volume carries an introductory part, methodology adopted, agricultural status of the state – including developmental initiatives taken so far over the years under various schemes, an analytical sectoral focus comprising integrated farming system, agriculture, agriculture marketing, horticulture, animal husbandry, fishery, tea, rubber and water resources. The second volume is a straight focus on the entire game plan – district wise for development of all aforesaid sectors with strategies designed, action plan, and road map and finally deliverables as an outcome of this whole exercise at the end of five years and post project period.

It is universally accepted that Integrated Farming System practised by farming community of Arunachal Pradesh and other states of North Eastern India is one of the most eco-friendly system – which addresses all issues of environmental degradation, pollution, over exploitation of bio resources, nutrient mining leading to soil health deterioration, global warming and climate change etc. Keeping in view this ground reality, it has been proposed to set up Centre of Excellence on Integrated Farming System in all districts as a centre for technology showcasing more particularly for new generation farmers / agri-entrepreneurs and this component alone is sure to be a game changer in our effort to make Arunachal Pradesh as one of the leading agri-horti State of India.

The Agriculture part focuses more on developing pulses and oil seeds production belts covering areas strategically suited for production as well storage and marketing point of view. The proposed seed banks will ensure quality seeds to the farmers and that too in proper time. This strategy alone will be a game changer in case of all field crops. The proposed farm machinery banks will play a catalytic role in augmenting production besides attracting new generation farmers towards farming sector – which is an issue now. All together 49080 nos. of farmers will be mobilised to attain a production level of about 4.5, 1.5 and 3.8 lakh MT of paddy, pulses and oilseeds respectively. Besides non traditional crops like buck wheat, niger, oil palm and maize in non traditional areas has been proposed. Ingredients of farm mechanization and Input Use Efficiency (IUE) are strategically incorporated and settings up of market infrastructures in ideal locations are also given prime consideration.

The Horticulture part of the Master Plan envisaged on precise crops for each district with end to end approach i.e. strengthening production for volume by intensive intervention, followed by massive orientation and exposure of the target groups to sites of technology showcasing, input support, improved management practices, scientific pre and post harvest handling and finally value addition and marketing. An additional area of 24510

Ha will be laid down under various horticultural crops of high market demand on most modern footing with elite planting material aiming to attain a productivity level of at least 10 tons per Ha in the days to come (existing around 3.6 tons/Ha). Thus an additional production of 2.45 lakh MT will be added to the existing production of 3.80 lakh MT and finally to achieve a level of 6.25 lakh MT with a strong tendency to escalate new heights in production as elite planting material will go on spreading even in traditional gardens. As fruit crops usually require minimum 5-7 years to enter into economic bearing stage, the impact will be gradually visible from this additional area which will be accommodated only with elite planting materials. Setting up elite nurseries within easy reach of farmers is a focus area. The design of plantation in many areas will be innovative and new components are being emphasized based on research findings and experiences of stake holders. The focus on vegetable is to go for off season production. The floriculture part is taking care of indigenous strength as well as commercial players. In case of spices the quality and volume is being encouraged. All options are explored to frame out precise strategy for sustainable exploration of vast resources under medicinal and aromatic plants. Apiary and mushroom sector has been given due consideration.

Animal Husbandry and Veterinary part of the action plan is the amalgamation of various initiatives to make it a most vibrant sector and also lucrative for new generation entrepreneurs in farming sectors. Practically it is a balance approach between infrastructure development (to ensure feed, fodder and health management) and breed improvement besides adequate focus on two unique assets of the state – namely Yak and Mithun. Aiming to bring latest technologies and elite germ plasm of various animals nearer to the farmers, this action plan projects a road map towards self sufficiency in production of meat and meat products, milk and milk products and egg. It is projected that the population of Mithun will reach around 3.5 lakhs from existing 2.5 lakhs approximately and in case of yak also it is projected that the population will be around 56000 by the year 2023 from the existing population of around 15000 due to systematization of the rearing system.

As regards Fishery component, the major objectives are for additional production of 20931 tons of fish annually – to pave the way for self sufficiency and secondly production of 43 million fish seed to materialize a blue revolution in the state. For this, the plan envisages multi-prong strategies like development and creation of 7527 ha of potential water bodies covering swampy/marshy areas, ponds and tanks, establishment of 47 fish hatcheries, 4 feed mills, 25 fish markets besides setting up of 97 units of ornamental fish breeding units.

Farmer's orientation and exposure to premier fishery institutes of the country is a vital initiative for the fish farmers.

Tea being one of the most potential sectors, this action plan has addressed all vital issues like – hi-tech nurseries, modern factories for processing and land reclamation of cultivable waste, soil and moisture conservation. Thus an additional production of 7830 tons of tea from an additional area of 4109 Ha has been proposed and that too with organic system to fetch better price.

When utilisation of vast marginal lands and augmenting farmer's income are the issues, rubber crop is well fitted to address the issue and accordingly this action plan proposes to boost up this sector by bringing an additional area of 4890 Ha under rubber to produce 4890 tons of rubber per year. Setting up of 98 nos. of hi-tech nurseries, 247 nos. of roller machine and 978 nos. of smoke house besides other issues like capacity building of rubber growers, distancing farmers from jhoom cultivation are the components and logics behind this initiative.

The action plan on Water Resources part is primarily aimed at to regain 32,041 Ha irrigation potential lying unutilised due to system deficiencies so that the total irrigation potential of 82,157 Ha can be fully utilized. In addition another 1656 Ha will be brought under assured means of irrigation through installation of 828 tube wells. Additional components of strengthening existing farm ponds, community tanks, individual farm ponds are being adequately accommodated to equip farmers with this most critical input i.e. water in their production system. Rainwater harvesting technologies are also incorporated with adequate weight-age.

As market dictates farmer's income, it has been proposed to strengthen the existing marketing system by setting up collection centres / wayside collection centres preferably adjacent to existing market with required infrastructure and carrier vehicles to streamline agro-horticultural produce from farmers. Besides it is proposed to set up 4 nos. of Terminal Markets on most modern footing at strategic locations to facilitate disposal of quality produce by growers or FPOs etc and to provide a platform for external buyers to source raw or processed products. The locations identified are Namsai, Holongi or Kimin, Ruskin and Bhalukpong. They will function as hub and will have tie up with 100 collection centres all over the state as spoke. Two primary objectives will

be fulfilled by this initiative and they are – the price will be known to the farmers to help decision making and secondly external buyers will get a regular platform to source produce of their preference. There is an attempt to provide access to external markets through Changlang boarder.

In order to phase out jhoom areas or opium growing areas to accommodate permanent crops/activities of settled farming, various initiatives under various sectors are proposed. Tourism being most potential area for the state, every effort has been made to tag tourism with horticulture/agriculture/animal husbandry/ fishery in an innovative way.

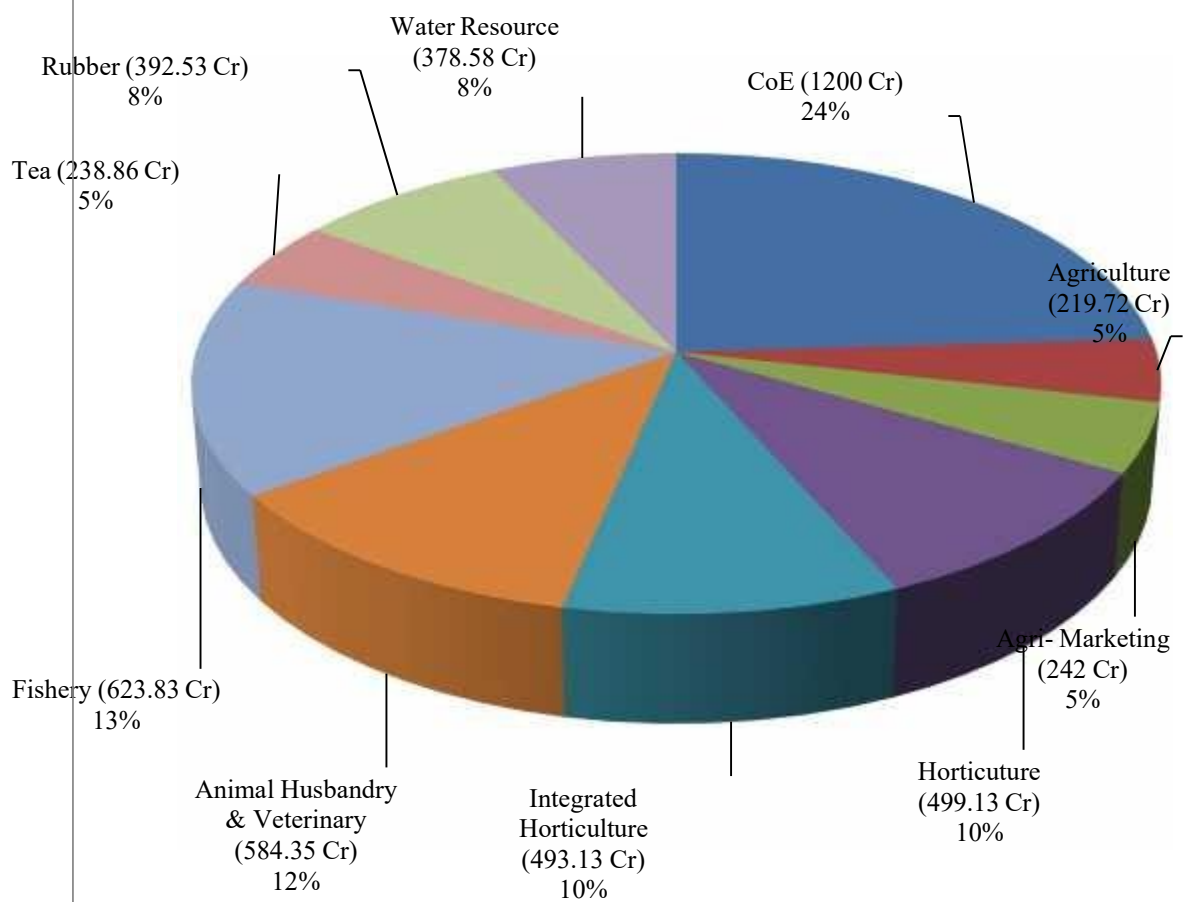
Adequate provisions have been made under the head of Supporting and Special Intervention and Technical Support under agri-horticulture sector primarily for moving ahead towards ‘Smart Agriculture’ with various latest initiatives on ICT application vi-a-vis agriculture such as ag-bots, drones, sensors applicable for weather forecasting etc, E-marketing, GPS, GIS etc. The ICAR System in the form of KVKs in each districts are expected to come up with such game plan and with innovative intervention. Such initiatives are indispensable for attracting new generation farmers towards farming.

The entire action plan is a structure of such logics, objectives, strategy and design which will be revealed through the pages containing action plan, road map and deliverables for each district and finally for the state as a whole.

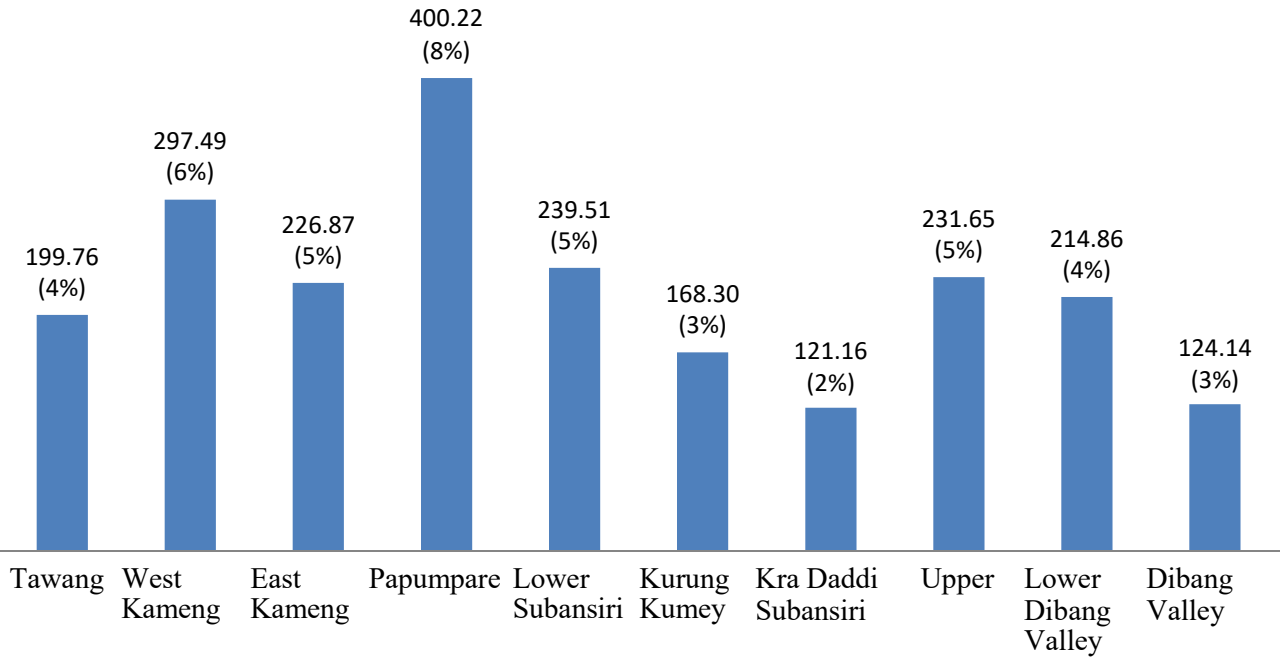
Estimated Budget at a Glance

Sl.No	Sector/ Component	Estimated Budget Amount(Rs. in Crores)
1	Centre of Excellence on Integrated Farming System	1200.00
2	Agriculture	219.72
3	Agriculture Marketing	242.00
4	Horticulture	499.13
5	Integrated Horticulture	493.13
6	Animal Husbandry and Veterinary	584.35
7	Fishery	623.83
8	Tea	238.86
9	Rubber	392.53
10	Water Resources	378.58
	Total:	4872.13

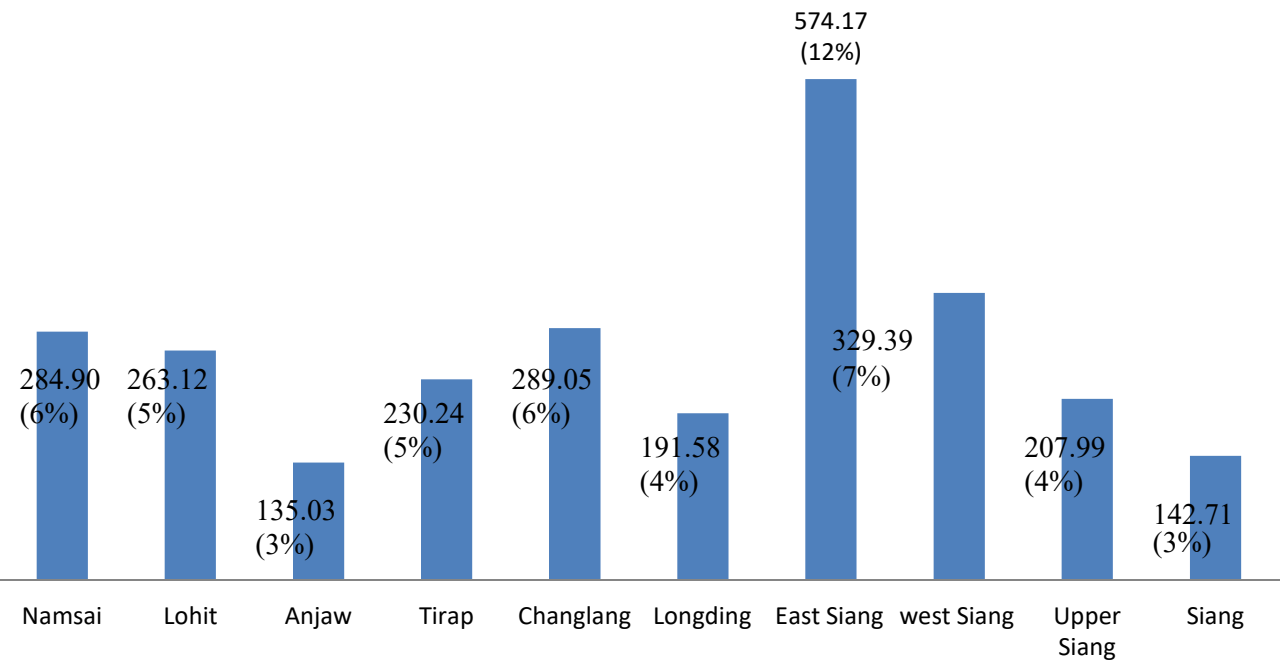
SECTORWISE FINANCIAL ALLOCATION



DISTRICTWISE FINANCIAL TARGET (Rs in Cr & % in perenthesis)



DISTRICTWISE FINANCIAL TARGET (Rs in Cr & % in perenthesis)



Master Plan for Agriculture and Allied Sectors-Arunachal Pradesh

DISTRICT AND SECTOR WISE FINANCIAL TARGET AT A GLANCE												
Name of the sector												(Rs. In Crore)
Sl. No.	Name of District	Centre of Excellence	Agriculture	Agriculture Marketing	Horticulture	Integrated Horticulture	Animal Husbandry	Fishery	Tea	Rubber	Water Resource	Total Financial Target
1	Tawang	60.00	7.25	1.10	25.58	28.95	38.07	24.88	0.00	0.00	13.94	199.76
2	West Kameng	60.00	16.09	51.10	39.66	43.80	42.79	22.43	5.30	1.31	15.01	297.48
3	East Kameng	60.00	13.77	1.10	23.48	36.54	35.09	22.73	4.05	2.86	27.26	226.88
4	Papumpare	60.00	20.10	51.10	33.37	44.04	52.24	59.87	17.44	32.11	29.95	400.22
5	Lower Subansiri	60.00	8.11	1.10	23.18	44.04	37.61	43.53	2.48	4.02	15.44	239.51
6	Kurung Kumey	60.00	6.60	1.10	36.98	20.80	22.80	9.61	5.99	0.00	4.40	168.27
7	Kra Daddi	60.00	4.52	1.10	11.35	14.62	13.73	8.19	3.35	0.00	4.34	121.19
8	Upper Subansiri	60.00	11.60	1.10	39.73	22.02	33.22	24.65	9.85	8.03	21.46	231.65
9	L/ Dibang Valley	60.00	13.94	1.10	18.83	14.62	26.71	38.24	7.89	8.03	25.50	214.85
10	Dibang Valley	60.00	4.89	1.10	16.53	6.08	15.30	12.39	0.00	0.00	7.86	124.15
11	Namsai	60.00	12.05	51.10	11.65	14.62	22.71	68.18	21.75	8.03	12.98	283.07
12	Lohit	60.00	17.35	1.10	28.48	22.02	30.46	36.44	43.88	4.02	21.20	264.94
13	Anjaw	60.00	5.31	1.10	17.88	12.17	20.25	10.36	0.00	0.00	7.97	135.03
14	Tirap	60.00	10.55	1.10	35.83	22.02	28.49	26.38	23.86	4.02	17.96	230.20
15	Changlang	60.00	13.98	21.10	19.93	22.02	29.52	49.09	33.15	8.03	32.25	289.06
16	Longding	60.00	10.37	1.10	21.55	13.67	21.48	40.03	4.11	4.02	15.28	191.60
17	East Siang	60.00	15.17	51.10	29.11	44.04	36.96	63.97	21.58	211.78	40.47	574.17
18	West Siang	60.00	13.65	1.10	28.23	30.42	33.89	31.54	7.34	80.26	42.96	329.40
19	Upper Siang	60.00	9.06	1.10	22.68	22.02	25.32	16.57	20.85	8.03	22.35	207.97
20	Siang	60.00	5.36	1.10	15.10	14.62	17.75	14.75	6.01	8.03	0.00	142.71
	Total:	1200.00	219.72	242.00	499.13	493.13	584.35	623.83	238.86	392.53	378.58	4872.13