

Annual Report

2016-17

Department of Animal Husbandry, Dairying & Fisheries
Ministry of Agriculture & Farmers Welfare
Government of India

Chapter 1

OVERVIEW OF ACHIEVEMENT

OVERVIEW OF ACHIEVEMENTS

1.1 Animal Husbandry, Dairying and Fisheries activities, along with agriculture, continue to be an integral part of human life since the process of civilization started. These activities have contributed not only to the food basket and draught animal power but also by maintaining ecological balance. Owing to conducive climate and topography, Animal husbandry, Dairying and Fisheries Sectors have played prominent socio-economic role in India. Traditional, cultural and religious beliefs have also contributed in the continuance of these activities. They further also play a significant role in generating gainful employment in the rural sector, particularly among the landless, small and marginal farmers and women, besides providing cheap and nutritious food to millions of people.

1.2 Livestock production and agriculture are intrinsically linked, each being dependent on the other, and both crucial for overall food security. Livestock sector is an important sub-sector of the agriculture of Indian economy. It forms an important livelihood activity for most of the farmers, supporting agriculture in the form of critical inputs, contributing

to the health and nutrition of the household, supplementing incomes, offering employment opportunities, and finally being a dependable “bank on hooves” in times of need. It acts as a supplementary and complementary enterprise.

1.3 According to NSSO 66th Round Survey (July 2009 – June 2010) on Employment and Unemployment, 15.60 million workers as per usual status (Principal status plus subsidiaries status) were engaged in farming of animals, mixed farming and fishing. Whereas as per estimate of NSS 68th Round (July 2011-June 2012) survey on Employment and Unemployment, 16.44 million workers as per usual status (Principal status plus subsidiaries status) were engaged in the activities of farming of animals, mixed farming, fishing and aquaculture.

1.4 India has vast resource of livestock and poultry, which play a vital role in improving the socio-economic conditions of rural masses. There are about 300 million bovines, 65.07 million sheep, 135.2 million goats and about 10.3 million pigs as per 19th Livestock Census in the country. The species wise population of animals in Livestock and Poultry population during the last three Censuses is given in table 1.1.

Table 1.1: Livestock and Poultry Population

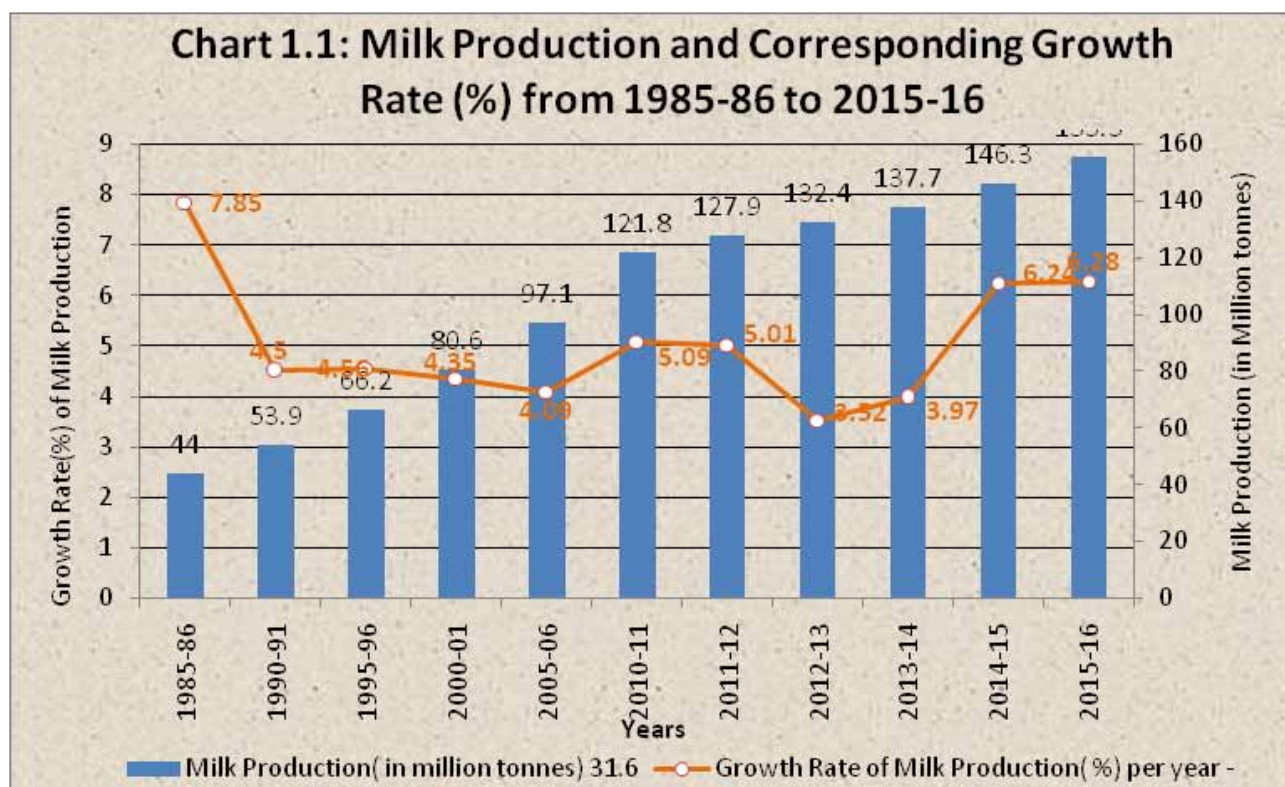
S. No.	Species	17th Livestock Census 2003 (no. in millions)	18th Livestock Census 2007 (no. in millions)	19th Livestock Census 2012 (no. in millions)	Growth Rate (%) 2007-12
1	Cattle	185.2	199.1	190.9	-4.10
2	Buffalo	97.9	105.3	108.7	3.19
3	Yaks	0.1	0.1	0.1	-7.64
4	Mithuns	0.3	0.3	0.3	12.88
	Total Bovines	283.4	304.8	300.0	-1.57
5	Sheep	61.5	71.6	65.07	-9.07
6	Goat	124.4	140.5	135.2	-3.82
7	Pigs	13.5	11.1	10.3	-7.54
8	Other animals	2.2	1.7	1.48	-12.94
	Total Livestock	485	529.7	512.05	-3.33
9	Poultry	489	648.8	729.2	12.39

The State-wise breakup of different species of livestock and Poultry is given at Annexure-I.

1.5 Livestock Production:

1.5.1 Livestock production and agriculture are intrinsically linked, each being dependent on the other, and both crucial for overall food security. According to estimates of the Central Statistics Office (CSO), the value of output livestock sector at current prices was about ₹5,91,691 crore during 2015-16 which is about 28.5% of the value of output from agricultural and allied sector. At constant prices the value of output from livestock is about 29% of the value of the output from total agriculture and allied sector.

1.5.2 Milk Production: India continues to be the largest producer of milk in world. Several measures have been initiated by the Government to increase the productivity of livestock, which has resulted in increasing the milk production significantly from the level of 102.6 million tonnes at the end of the Tenth Plan (2006-07) to 127.9 million tonnes at the end of the Eleventh Plan (2011-12). Milk production during 2014-15 and 2015-16 is 146.3 million tonnes and 155.5 million tonnes respectively showing an annual growth of 6.27%. The per capita availability of milk is around 337 grams per day in 2015-16. The production of milk and corresponding growth rate (%) per year from 1985-86 to 2015-16

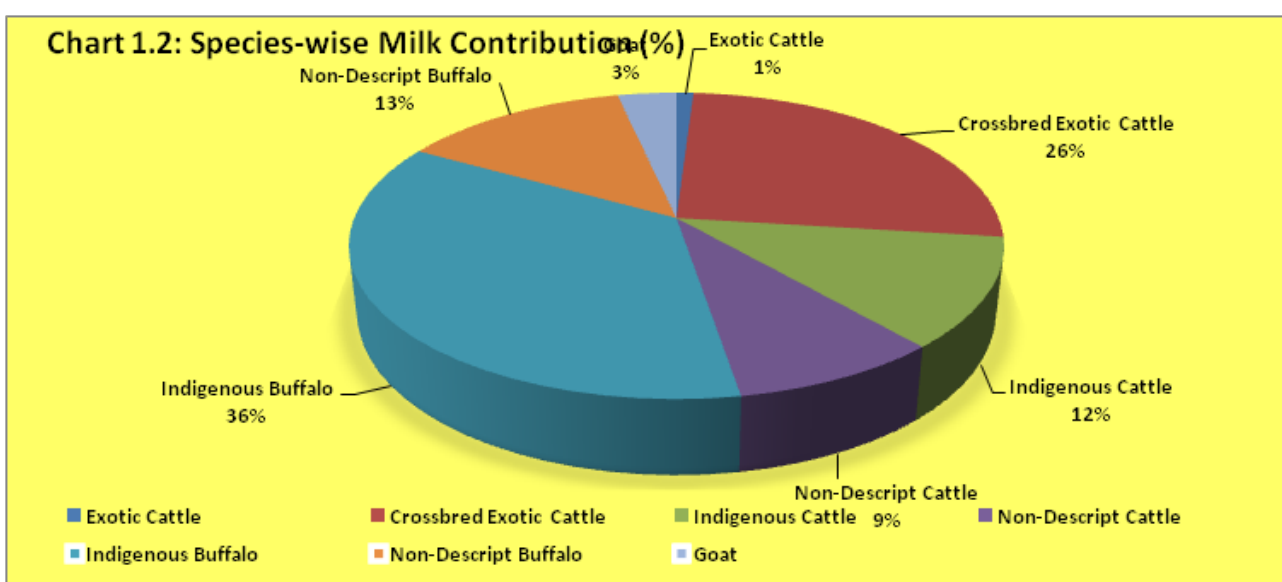


is shown at chart:1.1:

1.5.2.1 Average Yield Rate for Milk: The average yield of milk per day per animal in milk at National level from different species during 2015-16 is given below:

Table 1.2: Average Yield Rate for Milk

Exotic Cows (kg/day)	Crossbred Cows (kg/day)	Indigenous Cows (kg/day)	Non-Descript Cows (kg/day)	Indigenous Buffalo (kg/day)	Non-Descript Buffalo (kg/day)	Goat (kg/day)
11.21	7.33	3.41	2.16	5.76	3.80	0.45



1.5.2.2 Percentage Share of Milk Production during 2015-16.

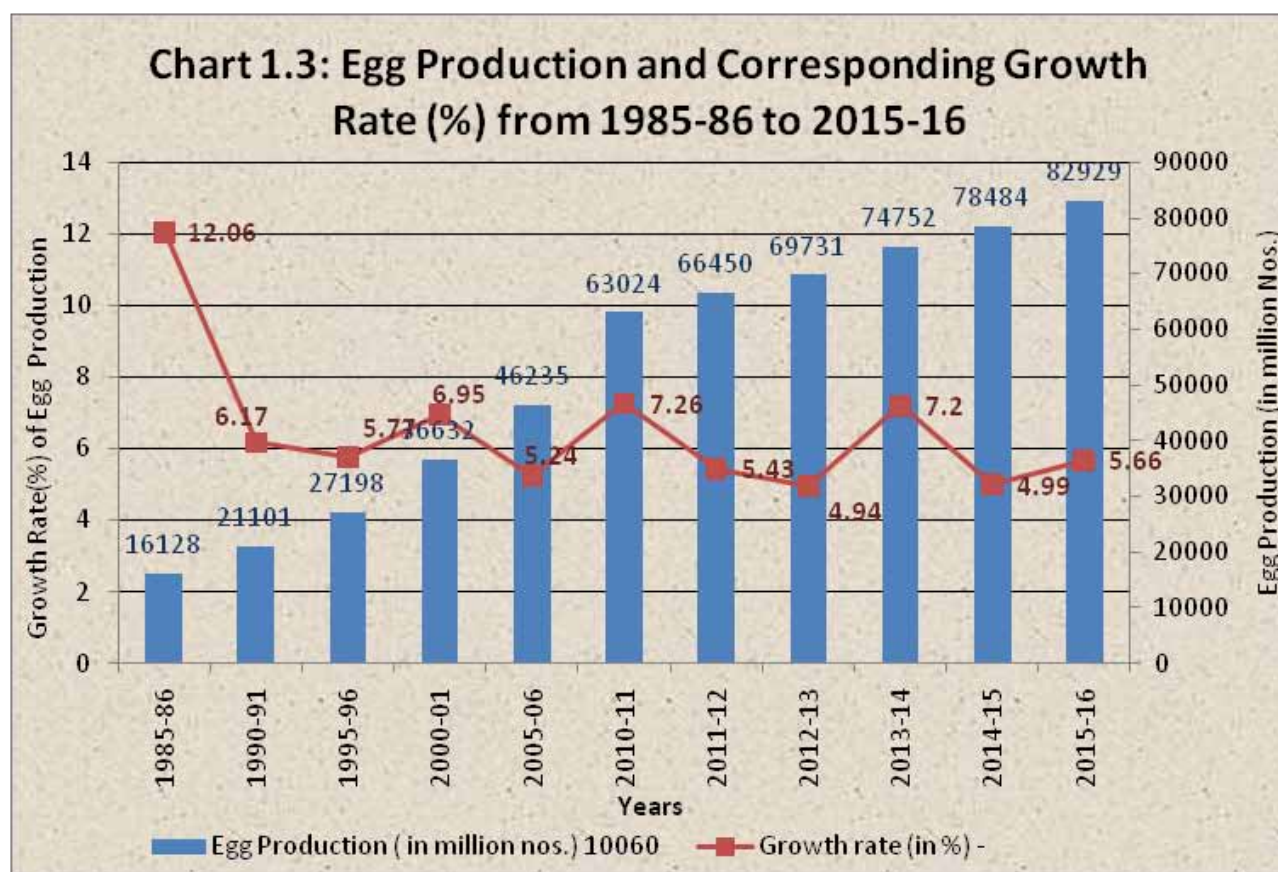
The above Chart shows the contribution of milk production by Cattle, Buffalo and Goat. The analysis shows nearly 36% of the milk production is contributed by Indigenous Buffaloes followed by 26% by crossbred cattle. The Indigenous cattle contribute 12% of the total milk production in the country whereas non-descript cattle contribute 9% milk production and non-descript buffaloes contribute 13% milk production.

1.5.3 Egg Production: Poultry production in India has taken a quantum leap in the last four decades, emerging from an unscientific farming practice to commercial production system with state-of-the-art technological interventions. Egg production at the end of the Tenth Plan (2006-07) was 50.70 billion as compared to 66.45 billion at the end of the Eleventh Plan (2011-12). Currently the total Poultry population in our country is 729.21 million (as per 19th Livestock Census) and egg production is around 82.93 billion during 2015-16. The per capita availability (2015-16) is around 66 eggs per annum. The poultry meat production is estimated to be 3.26 million tonnes. Egg production and the corresponding growth rate (%) per year of the country from 1985-86 to 2015-16 is shown at chart:1.3:

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1.5.3.1 Average Yield Rate for Egg: The average yield of egg per year of the Country from Fowls and Ducks during 2015-16 is given below:

Table 1.3: Average Yield Rate for Egg

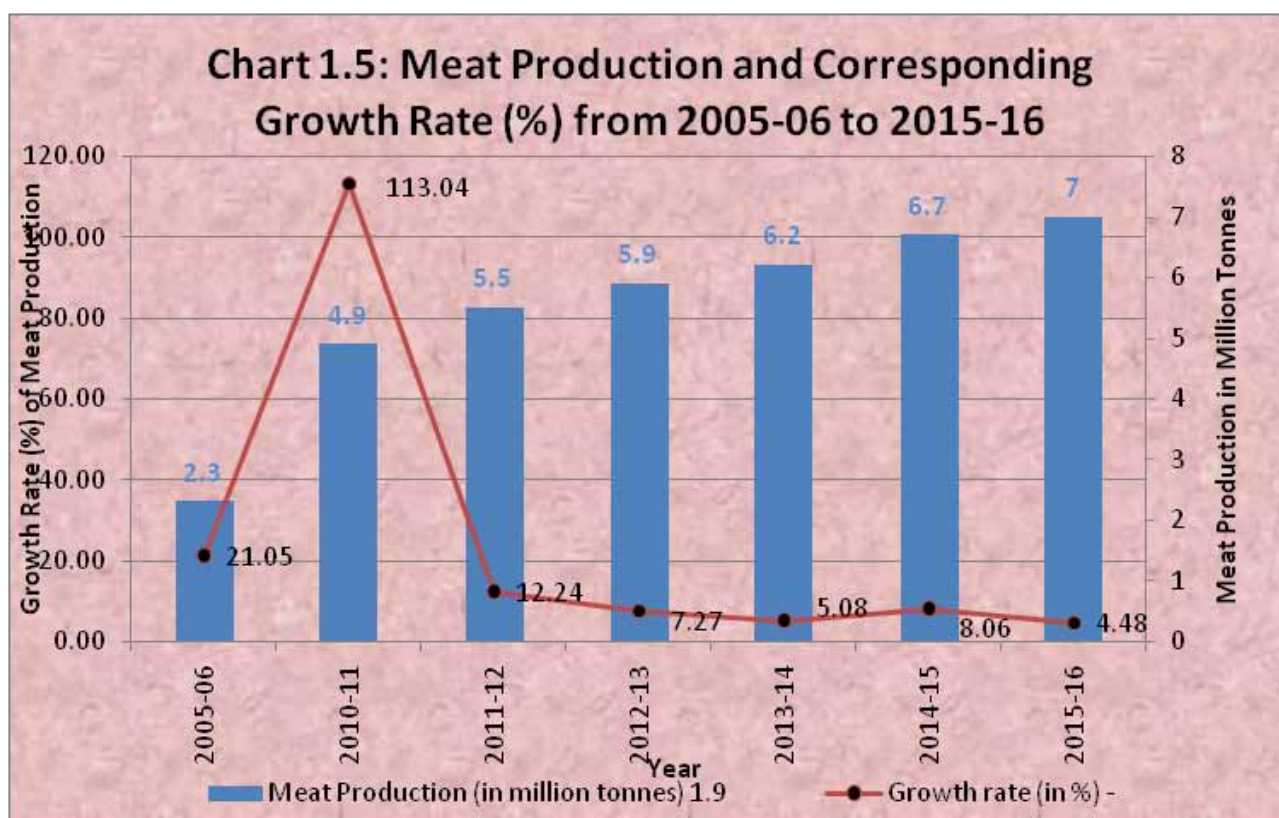
Fowls (nos./year)		Duck (nos./year)	
Desi Fowls	Improved Fowls	Desi Duck	Improved Duck
128.21	267.98	147.33	191.24

1.5.4 Wool Production: Wool production declined marginally at the end of Eleventh Five

Year Plan (2011-12) to 44.7 million kg from 45.1 million kg in the end of Tenth Five Year Plan (2006-07). Wool production in the beginning of Twelfth Plan (2012-13) was 46.05 million Kgs and increased to 48.1 million Kgs in 2014-15 but declined to 43.6 million Kgs in 2015-16. The Wool production has shown negative growth as (-) 9.47% during 2015-16. The production of wool and the corresponding growth rate (%) per year of the country from 1985-86 to 2015-16 is shown at chart:1.4 :

1.5.5 Meat Production: The Meat production has registered a healthy growth from 2.3 million tonnes at the end of Tenth Five Year Plan (2006-07) to 5.5 million tonnes at the end of the Eleventh Five Year Plan (2011-12). Meat production in the beginning of Twelfth Plan

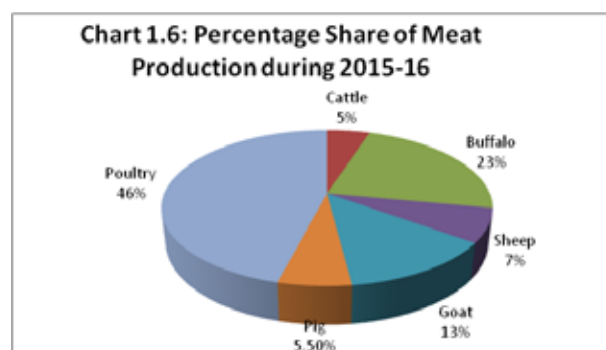
(2012-13) was 5.95 million tonnes which has been further increased to 7.0 million tonnes in 2015-16. The production of meat and the corresponding growth rate (%) per year of the country from 2005-06 to 2015-16 is shown at chart:1.5 :



1.5.5.1 Category wise Total and Percentage Share of Meat Production during 2015-16.

Table No. 1.4

Category	Total Production (000 tonnes)
Cattle	329
Buffalo	1611
Sheep	485
Goat	943
Pig	388
Poultry	3264
Total	7020



The Production of major livestock products since 1950-51 to 2015-16 is given at Annexure-II.

1.6 Fisheries Production

1.6.1 The Country has vast potential for fisheries in view of our long coastline of about 8,118 kms apart from the inland water resources. During the financial Year 2015-16, India has exported ₹30420.83crore which is about 0.9% of the National Gross Domestic Products (GDP) and 5.17% to the agriculture GDP (2015-16).

1.6.2 India is the second largest producer of fish and also second largest producer of fresh water fish in the world. Fish production has increased from 41.57 lakh tonnes (24.47 lakh tonnes for marine and 17.10 lakh tonnes for inland fisheries) in 1991-92 to 107.90 lakh tonnes (35.8 lakh tonnes for marine and 72.10 lakh tonnes for inland fisheries) in 2015-16 (Provisional). During the first two quarters of 2016-17 the fish production is estimated at 5.03 million tonnes (P). The State-wise details of fish production, marine fisheries resources and inland water

resources are given at Annexure-III, IV & V and the year-wise production of fish seeds is given in Annexure-VI.

1.7 Government's Initiative and Assistance to States

1.7.1 As Agriculture, including Animal Husbandry, Dairying and Fisheries is a State subject; the emphasis of the Department has been on supplementing efforts of the State Governments in the development of these sectors. The Department has been providing assistance to the State Governments for the control of animal diseases, scientific management and upgradation of genetic resources, increasing availability of nutritious feed and fodder, sustainable development of processing and marketing facilities and

enhancement of production and profitability of livestock and fisheries enterprises.

1.8 Eleventh Five Year Plan

1.8.1 The approach for the 11th Five Year Plan for the livestock sector was aimed at achieving an overall growth between 6 to 7 percent per annum for the sector as a whole, with milk group achieving a growth of 5% per annum and meat and poultry achieving a growth of 10% per annum. The growth of value of output from the livestock sector during Eleventh Plan was about 4.8 % per annum and from fisheries was about 3.6% per annum.

1.8.2 As against the outlay of ₹8,174 crore provided to this Department for the 11th Five Year Plan, year-wise financial achievements are given below:

Table 1.6: Year-wise BE, RE and Actual Expenditure during 11th Plan

(₹ in crore)

Year	Approved BE	Revised Estimate (RE)	Actual Exp.	% of Utilization w.r.t. RE	% of Utilization w.r.t. BE
11th Plan (2007-12)	8174.00				
2007-08	910.00	810.00	784.09	96.80	86.16
2008-09	1000.00	940.00	865.27	92.05	86.53
2009-10	1100.00	930.00	873.38	93.91	79.40
2010-11	1300.00	1257.00	1104.68	87.88	84.98
2011-12	1600.00	1356.52	1243.11	91.64	77.70
Total	5910.00	5293.52	4870.53	92.01	82.41

1.8.3 In addition to the approved outlay of the Department of Animal Husbandry, Dairying and Fisheries, about an amount of ₹5,406.38 crore was allocated for animal husbandry, dairying and fisheries sector under Rashtriya Krishi Vikas Yojana and National Mission for Protein Supplements during 11th Plan.

1.8.4 During the Eleventh Five Year Plan, Department had initiated several new programmes/schemes like Establishment

of Veterinary Hospitals and Dispensaries, National Control Programme on Brucellosis, National Control Programme of Peste des Petits Ruminants (PPR) and expansion of Foot & Mouth Disease Control Programme from 54 to 221 districts for strengthening the efforts for animal disease control. To meet the shortage of fodder, several new components were incorporated in the Feed and Fodder scheme. Further, Dairy Entrepreneurship

Development Scheme was initiated in the 11th Plan with the objective of increasing investment in dairy sector for increasing milk production in the country while creating self-employment opportunities.

1.9 Twelfth Five Year Plan

1.9.1 The Department has received in-principle approval of an allocation of ₹14,179.00

Allocation of ₹14,179 crore for the Department for 12th Five Year Plan.

crore from the Planning Commission (including ₹1,584.00 crore as External Aid) for 12th Five Year Plan. This includes an amount of ₹7,628 crore for Animal Husbandry, ₹4,976.00 crore for Dairy Development and ₹2,483.00 crore for the Fisheries sector, ₹35.00 crore for Secretariat and Economic Services and ₹51.00 crore for Special Package for Development of Kuttanad Eco-System and Mitigation of Agrarian Distress in Idukki district in Kerala.

1.9.2 Livestock sector which recorded a growth in value of output about 4.8 percent per annum in Eleventh Five Year Plan has excellent potential for higher growth in Twelfth Five Year Plan. The increased demand for protein foods in the country is the main driver for such growth, which is also more inclusive since small holders and landless farmers account for major share in ownership of livestock. Similarly, the fisheries sub-sector, which has recorded a growth of about 5 percent per annum previously, can grow at more than 6 percent per annum during Twelfth Five Year Plan.

1.9.3 Major challenges of animal husbandry sectors are effective control of animal diseases, shortage of feed and fodder, breed improvement while preserving diverse genetic resources and dissemination of technology, skills and quality services to farmers for improving productivity, which need to be addressed.

1.9.4 Department has restructured its Centrally Sponsored Schemes (CSSs) for implementation during Twelfth Five Year

Plan and accordingly, allocate funds from the available resources to achieve the growth targets in following manner :

- a) In order to boost the growth of the livestock sector, the National Livestock Mission (NLM) has been launched during Twelfth Five Year Plan, with the main objective of achieving sustainable development of the sector by providing greater flexibility to states in formulating and implementing the schemes as per the local needs for benefit of the farmers. The National Livestock Mission will have an important component to promote availability of feed and fodder to substantially reduce the gap between availability and demand. The Mission also supports initiatives relating to development of poultry, piggery, small ruminants and other minor livestock species as per the agro-climatic conditions of different regions/states. An amount of ₹2,800 crore had been allocated for carrying out above activities under National Livestock Mission for the 12th Five Year Plan.
- b) Taking into account the importance of effective control of animal diseases, which adversely impact the productivity of livestock, the Department has launched National Control Programmes for major animal diseases like FMD, PPR, Brucellosis and Classical Swine Fever. The FMD Control Programme is now being implemented in 351 districts of the country covering 13 States and 06 UTs. The whole country under FMD-CP will be covered in a phased manner depending on the availability of vaccine and funds during 12th Plan period. PPR and Brucellosis Control program are already being implemented in all the States/UTs, while CSF-CP is focused initially in NE States. An amount of ₹3,114 Crore has been allocated for the

- Livestock Health and Disease Control scheme for the 12th Five Year Plan.
- c) There is a need to further expand the artificial insemination programme from the present level of coverage from about 25% to 50% of breedable bovine population by end of Twelfth Plan in order to improve productivity of milk by genetic improvement. Efforts for conservation of quality indigenous breeds will be strengthened further. The cooperative sector has made substantial contribution towards modernizing the dairy industry. For strengthening the efforts of the dairy cooperatives to increase productivity and income of the milk producers/farmers through improved management of breeding and feeding, Government has launched the National Dairy Plan (Phase-I) with effect from 2011-12 to be implemented during Twelfth Plan with an outlay of ₹1,756 crore.
- d) The combined activities in respect of breeding and dairying will be more effective in extension of artificial insemination services, feed management and marketing of good quality of milk which are essential for improving productivity and income of farmers. The scheme for bovine breeding has been merged with dairy development schemes to create synergies of resources. National Programme for Bovine Breeding and Dairy Development (NPBB&DD) scheme is having two main components namely, National Programme for Bovine Breeding (NPBB) and National Programme for Dairy Development (NPDD). States have established Livestock Development Boards to implement the breeding programme for bovines with a focus on development and conservation of important indigenous breeds. The

component for the dairy development is mainly focusing on the states/areas not covered under NDP. Convergence in service delivery for breeding, dairying and extension through dairy cooperatives is being attempted in a phased manner. An amount of ₹1,800 crore has been allocated for NPBB&DD for the Twelfth Five Year Plan.

- e) The National Fisheries Development Board (NFDB), which was launched in the year 2006 for fostering integrated development of fisheries sector, is being strengthened further by bringing almost all schemes relating to development of fisheries into its fold with focus on management of fish diseases and creation of related infrastructure. An amount of ₹1,880 crore has been allocated for NFDB for the Twelfth Five Year Plan.

1.9.5 Hon'ble Finance Minister has announced launching of following new schemes with an allocation of ₹850.00 crore during the Budget Speech for the year 2015-16:

- a) Indigenous Breeds: The scheme is aimed at development and conservation of indigenous breeds, with the objectives of conservation and preservation of indigenous bovine breeds, Upgradation of genetic merit of indigenous breeds, enhancing production and productivity of indigenous bovine breeds, preserving high genetic merit stock in a National Breeding Centre and to supply high genetic merit disease free germplasm of indigenous bovine breeds.
- | |
|--|
| Four new schemes Indigenous Breeds and Blue Revolution-Inland Fisheries has been launched with an allocation of ₹50 crore for 2014-15. |
|--|
- b) Blue Revolution – Inland Fisheries: The scheme has been launched to utilize

the selected potential area for fisheries development.

1.9.6 Considering Dairy as an important source of additional income for the farmers. Availability of milk processing facility and other infrastructure will benefit the farmers through value addition. A large number of milk processing units set up under the operation flood programme has since become old and obsolete. Hon'ble Finance Minister has made

an additional allocation for dairy processing and infrastructure Development Fund set up in NABARD with a corpus of ₹8000.00 crore during Budget Speech in 2017-18 for the three years. Initially, the Fund will start with a corpus of ₹.2000.00 crore.

1.9.7 As against the outlay of ₹14,179 crore provided to this Department for the 12th Five Year Plan, year-wise financial achievements are given below in Table:1.7:

Table 1.7: Year-wise BE, RE and Actual Expenditure during 12th Plan

(₹ in crore)

Year	Approved BE	Revised Estimate (RE)	Actual Exp.	% of Utilization w.r.t. RE	% of Utilization w.r.t. BE
12th Plan (2012-17)	14179.00				
2012-13	1910.00	1800.00	1736.37	96.47	90.91
2013-14	2025.00	1800.00	1748.80	97.16	86.36
2014-15	2174.00	1800.00	1738.07	96.56	79.94
2015-16	1491.14	1491.14	1418.20	95.11	95.11
2016-17	1600.00	1748.00	1348.90*	77.17	84.30
Total	9200.14	8639.14	7990.34	92.49	86.85

*upto 31.12.2016

1.10 Annual Plan 2014-15 & 2015-16

1.10.1 The Department was allocated ₹1491.14 crore for the Annual Plan 2015-16, which was maintained at the RE stage. The final expenditure for 2015-16 was ₹1,418.20 crore. For the year 2016-17, the Department has been allocated ₹1600.0 crore which has been

increased at RE stage i.e. ₹1748.00. By the end of December, 2016, the Department has incurred an expenditure of ₹1348.90 crore out of the allocated fund for the financial year 2016-17.

1.10.2 The scheme-wise BE, RE and Expenditure for 2015-16 and 2016-17 is given at Annexure-VII.

Chapter 2

ORGANIZATION

ORGANIZATION

2.1 Structure

2.1.1 The Department of Animal Husbandry, Dairying & Fisheries is one of the Departments under the Ministry of Agriculture and Farmers Welfare. It came into existence on February 1, 1991 by merger of two Divisions of the Department of Agriculture and Cooperation viz. Animal Husbandry and Dairy Development into a separate Department. The Fisheries Division of the Department of Agriculture & Cooperation and a part of the Ministry of Food Processing Industries was later transferred to this Department on October 10, 1997.

2.1.2 The Department is under the overall charge of Shri Radha Mohan Singh, Hon'ble Minister of Agriculture and Farmers Welfare. He is assisted by three Ministers of State for Agriculture and Farmers Welfare namely Shri S.S. Ahluwalia, Shri Sudarshan Bhagat and Shri Parshottam Rupala. The administrative head of the Department is the Secretary (Animal Husbandry, Dairying & Fisheries).

2.1.3 Secretary of the Department is assisted by Animal Husbandry Commissioner, four Joint Secretaries and one Adviser (Statistics) in discharging the responsibilities assigned to this Department. The organizational chart of the Department and work allocation among various Divisions is given at Annexure-VIII.

2.2 Functions

2.2.1 The Department is responsible for matters relating to livestock production, preservation, protection & improvement of stocks, dairy development, matters relating to the Delhi Milk Scheme and the National Dairy Development Board. It also looks after all matters pertaining fisheries, which includes inland and marine sectors and matters related to the National Fisheries Development Board.

2.2.2 The Department advises the State Governments/Union Territories in the formulation of policies and programmes in the field of animal husbandry, dairy development and fisheries. The main focus of the activities is on (a) Development of requisite infrastructure in States/UTs for improving animal productivity; (b) Promoting infrastructure for handling, processing and marketing of milk and milk products; (c) Preservation and protection of livestock through provision of health care; (d) Strengthening of central livestock farms (Cattle, Sheep and Poultry) for development of superior germplasm for distribution to States; and (e) Expansion of aquaculture in fresh and brackish water, development of marine fisheries infrastructure & post harvest operations and welfare of fisherfolk, etc.

2.2.3 The list of the subjects allocated to the Department is given at Annexure-IX.

2.3 Subordinate Offices

2.3.1 The Department looks after the administration of the following field / subordinate Offices spread all over the country (Table 2.1).

Table 2.1: Subordinate Offices

S. No.	Subordinate Offices	Number
(i)	Central Cattle Development Organizations	12
(ii)	Central Poultry Development Organizations	5
(iii)	Central Sheep Breeding Farm	1
(iv)	Central Fodder Development Organizations	8

(v)	National Institute of Animal Health, Baghpat	1
(vi)	Animal Quarantine Certification Service Station	6
(vii)	Delhi Milk Scheme	1
(viii)	Central Institute of Coastal Engineering for Fishery, Bangalore	1
(ix)	Central Institute of Fisheries, Nautical and Engineering Training, Kochi	1
(x)	National Institute of Fisheries Post Harvest, Technology and Training, Kochi	1
(xi)	Fishery Survey of India, Mumbai	1
	Total	38

2.3.2 A list of the aforesaid subordinate offices is given at Annexure-X.

2.4 National Dairy Development Board (NDDB)

2.4.1 National Dairy Development Board, located at Anand, Gujarat, set up in 1965 and declared as a statutory body corporate in 1987 under the NDDB Act, is a premier institution to accelerate the pace of dairy development on cooperative lines in the country.

2.5 National Fisheries Development Board (NFDB)

2.5.1 National Fisheries Development Board (NFDB) was set up in September, 2006, with its head quarter at Hyderabad to realize the untapped potential of fisheries sector in inland and marine fish capture, culture, processing & marketing of fish, and overall growth of fisheries sector with the application of modern tools of research & development.

2.6 Coastal Aquaculture Authority

2.6.1 The Coastal Aquaculture Authority (CAA) was established under the Coastal Aquaculture Act, 2005 vide Gazette Notification dated 22nd December 2005. The aims and objectives of the Authority are to regulate 'Coastal Aquaculture' activities in the areas notified by the Central Government as 'coastal areas' and for matters connected therewith or incidental thereto. The Authority is empowered to make regulations for the construction and operation of aquaculture farms in coastal areas, registration of aquaculture farms and hatcheries, to inspect them to ascertain their environmental impact, remove or demolish coastal aquaculture farms which cause pollution, fixing standards for coastal aquaculture inputs in order to facilitate environmentally responsible and socially acceptable coastal aquaculture.

2.7 Veterinary Council of India

2.7.1 Veterinary Council of India (VCI) is a statutory body constituted under the provision of India Veterinary Council Act, 1984. Veterinary Council is responsible for regulating veterinary practices as well as for maintaining uniform standards of veterinary education through Minimum Standard of Veterinary Education Regulations in all veterinary institutes across the country.

2.7.2 Veterinary Council of India is consisting of 27 Members - five Members nominated by the Government of India from amongst the Directors of Animal Husbandry of those States to which the Act extends, four Members from amongst the heads of Veterinary Institutions in the States to which the Act extends, one Member nominated by the Indian Council of Agricultural Research (ICAR), one Member to represent Government of India from Department of Animal Husbandry, Dairying and Fisheries (DADF), Ministry of Agriculture and Farmers Welfare, one Member nominated by the Indian Veterinary Association, one Member nominated from amongst the

Presidents of the State Veterinary Councils of those States to which this Act extends and one Member nominated from amongst the Presidents of the State Veterinary Associations of those States to which this Act extends. Eleven members are elected from amongst the persons enrolled in the Indian Veterinary Practitioners Register. Animal Husbandry Commissioner, Government of India and Secretary, Veterinary Council of India are the Ex-officio Members of the Council.

2.7.3 To meet the shortage of trained veterinary manpower in the country, the Veterinary Council of India took various steps to increase the number of recognized college from 36 to 46 and increased the admission intake in 17 veterinary colleges on the basis of existing infra-structure. Admission in B.V.Sc. and A.H. degree course has been allowed in six new veterinary colleges including Indian Veterinary Research Institute, Izatnagar, Bareilly. The Council is in the process of developing software for online registration of veterinary practitioners with the State Veterinary Council and Veterinary Council of India. The Council has also published Minimum Standards of Veterinary Education (MSVE) Regulations, 2016 after amending MSVE Regulations, 2008.

2.7.4 In order to regulate the standards of veterinary education in the country and to ensure implementation of the Minimum Standards of Veterinary Education – Degree Course (B.V.Sc. & A.H.) Regulations, the Council carries out inspections of the Veterinary Colleges in respect of the facilities available for imparting veterinary education and the examinations leading to award of B.V.Sc. & A.H. qualification periodically under the provisions of Section 19 and 20 of the Indian Veterinary Council Act, 1984. During the period of the report, the Council has inspected 32 veterinary colleges in various States, except Jammu & Kashmir, across the country.

2.7.5 The Council has made direct registration

of 803 numbers of practitioners desirous of registering their names with Veterinary Council of India as per section 24 of Indian Veterinary Council Act, 1984 and as provided by Veterinary Council of India (Registration) Regulations, 1992. The Council disposed 133 applications, during the year, for transfer of registration of veterinary practitioners from one State to another State, as provided under Section 52 of the Indian Veterinary Council Act, 1984.

2.8 Grievances Cell

2.8.1 A Grievances Cell has been set up in the Department to look into grievances of the public. The cell is headed by Director level officer.

2.9 Liaison Officer for SC/ST

2.9.1 An officer of the rank of Director in the Department has been designated as Liaison Officer for SC/ST employees of this Department as well as for its subordinate offices.

2.10 Vigilance Unit

2.10.1 Vigilance Unit processes vigilance cases pertaining to the Department and its subordinate offices. The Chief Vigilance Officer monitors the vigilance cases on a regular basis. The Department along with its field units observed Vigilance Awareness Week from 31st October, 2016 – 5th November, 2016. The theme of observing Vigilance Awareness Week was “Public Participation in Promoting Integrity and eradicating Corruption”. Secretary (ADF) administered a pledge to all officers and staff on 31.10.2016.

2.11 Progressive use of Hindi

2.11.1 The Department has made concerted efforts during the year for promotion of Hindi in Official work. The Hindi Section was actively involved in translating various important documents like the Annual Report, Performance Budget, Parliament Questions, documents related to Parliamentary Standing Committee and Cabinet notes, etc. as well as in

implementing the Official Language Policy of the Government.

2.11.2 An Official Language Implementation Committee is functioning in the Department under the Chairmanship of Joint Secretary (Admn.). In accordance with the prescribed rules, two meetings of the Committee were held during the year. The progress in use of Hindi in the Department was reviewed in these meetings. Suggestions were given to promote the use of Hindi in official work. As a result of these suggestions, the percentage of correspondence in Hindi has increased considerably.

2.11.3 Circular letters were also issued from time to time from the Secretary, Department of Animal Husbandry, Dairying & Fisheries and Joint Secretary concerned to all Officers/Sections emphasizing need for proper implementation of the Official Language Policy of the Government.

2.11.4 All letters received in Hindi were replied in Hindi. Similarly letters originated from the Department to States located in region "A" and "B" were also sent in Hindi. Provisions of Section 3(3) of the Official Language Act, 1963 were also fully complied with.

2.11.5 Hindi Fortnight was observed in the Department from 1st to 15th September, 2016. During which, various competitions such as Hindi essay writing, Hindi noting drafting, Hindi Rajbhasha Gyan and debate were organized. A large number of officials participated in these competitions and cash awards were given to successful candidates in a function presided over by the joint Secretary.

2.12 Implementation of Right to Information (RTI) Act, 2005

2.12.1 For the purpose of providing information of public interest, Department has designated Central Public Information Officers (CPIOs) and Appellate Authorities under the relevant

provision of the RTI Act. Similarly, separate CPIOs and Appellate Authorities under RTI Act have been designated for various subordinate offices and autonomous organizations under the Department. RTI applications received through online RTI Portal and otherwise are forwarded online to the concerned CPIO for speedy disposal.

2.13 Reservation for Scheduled Castes (SCs), Scheduled Tribes (STs), Other Backward Castes (OBCs) and others:

2.13.1 Department of Animal Husbandry, Dairying & Fisheries (DAHD&F) continued its endeavor for strict implementation of the orders issued by the Government of India from time to time, regarding reservation in services for SCs, STs, OBCs, minorities, ex-servicemen, and physically disabled persons.

2.14 Prevention of Harassment of Women Employees

2.14.1 A complaint for prevention of sexual harassment of women at workplace was reconstituted by the Department. Since, some of the member and chairman of existing committee have either retired or have been transferred; the process of reconstitution of committee is under process. No complaints alleging sexual harassment was received from any women employee at headquarters in the Department during 2016-17.

2.14 Minimum Government, Maximum Governance

2.14.1 Initiatives taken by the department for speedy disposal of grievances have been reflected in the CPGRAM Portal.

2.14.2 Monthly Report on significant development and monitoring of various issues viz. Presentation made before Prime Minister, Central State Cooperation, decisions of cabinet and cabinet Committee through e-Samiksha portal is being done regularly.

Chapter 3

ANIMAL HUSBANDRY

ANIMAL HUSBANDRY

3.1 The Department has been operating 18 Central Livestock Organizations and allied institutions for production and distribution of superior germplasm to the State Governments for cross-breeding and genetic upgradation of the stocks. Besides, the Department is implementing various schemes for the development of requisite infrastructure and supplementing efforts of the State Governments in achieving accelerated growth of animal husbandry sector.

3.2 Central Cattle Development Organizations

3.2.1 These organizations include seven Central Cattle Breeding Farms, one Central Frozen Semen Production and Training Institute and four Central Herd Registration Units established in different regions of the country to produce genetically superior breeds of bull calves, good quality frozen semen and for identification of superior germplasm of cattle and buffaloes, so as to meet the requirement of bull and frozen semen in the country.

3.2.2 Central Cattle Breeding Farms (CCBFs)

3.2.2.1 There are seven Central Cattle Breeding Farms (CCBFs) located at Alamadhi (Tamil Nadu), Andeshnagar (UP), Chiplima & Sunabeda (Orissa), Dhamrod (Gujarat), Hessarghatta (Karnataka) and Suratgarh (Rajasthan) which are engaged in scientific breeding programmes of cattle and buffaloes and production of high pedigreed bulls for upgradation of genetic potential of cattle and buffalo population besides providing awareness training to the farmers and breeders. These

farms are producing high pedigreed bull calves of indigenous and exotic breeds of cattle and important buffalo breeds for distribution to State Governments, Breeding Agencies, NGOs, Co-operatives, Gram Panchayats, Private Farms and individual farmers. The bull calves are produced from Indigenous Cattle breeds viz. Tharparkar, Red Sindhi, Exotic Breeds viz. Jersey, Holstein Friesian, Buffalo breeds viz. Murrah and Surti and Cross breeds of Jersey X Red Sindhi and H.F. X Tharparkar.

3.2.2.2 These farms produced 297 nos. of bull calves and trained 2945 farmers in dairy farm management during the year 2015-16 (up to 31.12.2016).

3.2.3 Central Frozen Semen Production and Training Institute (CFSP& TI)

3.2.3.1 Central Frozen Semen Production & Training Institute (CFSP&TI) is a premier institute located at Hessarghatta, Karnataka producing frozen semen of indigenous, exotic (HF & Jersey), crossbred cattle and Murrah buffalo for use in Artificial Insemination (AI). The institute also provides training in frozen semen technology to technical officers of the State Governments, Universities, Milk Federations and other Institutes. It also acts as one of the centre for testing of indigenously manufactured frozen semen and AI equipments. The Institute has State of Art Frozen Semen Laboratory and follows the procedure as laid in Minimum Standard Protocol (MSP). The Central Monitoring Unit (CMU) set up by DADF has awarded it "A Grade" in 2016. The laboratory is also ISO - 9000 -2008 Quality Management System certified.

Jaffrabadi bull



3.2.3.2 The institute has produced 4.21 lakh doses of frozen semen and provided training to 90 persons in the field of Frozen Semen Technology & Andrology during the year 2016-17-16 (up to 31.10.2016).

3.2.4 Central Herd Registration Scheme (CHRS)

3.2.4.1 Central Herd Registration Scheme is for registration of elite cows and buffalo breeds of national importance and provides incentive for rearing of elite cows and male calves. The main objective of the scheme are identification & location of superior germplasm, using the data for production of superior germplasm, preservation of indigenous germplasm and milk recording of cattle and buffaloes for improving dairy farming.

3.2.4.2 There are four CHRS Units under this scheme located at Rohtak, Ahmadabad, Ajmer

and Ongole. The Milk Recording Centres located in the States of Gujarat, Maharashtra, Rajasthan, Haryana, Delhi, Uttar Pradesh and Andhra Pradesh are functioning for recording the milk yield of indigenous breeds of Gir, Kankrej, Haryana and Ongole of Cattle and Murrah, Jaffrabadi, Surti and Mehsana breeds of buffalo for confirmation of their phenotypic breed characteristic and milk production level. The primary registration of 8281 cows & buffaloes was done during 2016-17 (up to 31.10.2016).

3.3.7 E-Pashuhaat

3.3.7.1 During National Milk Day celebration in India on the birth anniversary of Dr. Verghese Kurien, the Father of White Revolution on 26-November-2016 at New Delhi, Shri Radha Mohan Singh, Hon'ble Minister for Agriculture & Farmers welfare Minister launched e-pashuhaat

portal (www.epashuhaat.gov.in) for the first time in the country to connect the breeders and farmers for sale and purchase of germplasm. Through the portal breeders /farmers can sell and purchase breeding stock, information on all forms of germplasm including semen, embryos and live animals with all the agencies and stakeholders in the country. The relevant information has been uploaded in the portal. Through this portal, farmers will know about the availability of quality disease free bovine germplasm with different agencies in the country. The portal will lead to propagation of high genetic merit germplasm.

Gir Cow



3.3 National Programme for Bovine Breeding Component of National Programme for Bovine Breeding and Dairy = Development (NPBB&DD) Scheme:

3.3.1 The National Programme for Bovine Breeding and Dairy Development (NPBBD) has been initiated in February 2014 by merging four ongoing schemes of the Department of Animal Husbandry, Dairying and Fisheries in the dairy sector, viz., National Project for Cattle and Buffalo Breeding (NPCBB), Intensive Dairy Development Programme (IDDP), Strengthening Infrastructure for Quality & Clean Milk Production (SIQ & CMP) and Assistance to Cooperatives (A-C). This has been done with a view to integrate milk production

and dairying activities in a scientific and holistic manner, so as to attain higher levels of milk production and productivity, to meet the increasing demand for milk in the country. The Scheme has two components (a) National Programme for Bovine Breeding (NPBB) and (b) National Programme for Dairy Development (NPDD).

3.3.2 The component National Programme for Bovine Breeding has focus on extension of Field AI Net work through “MAITRI-Multi-purpose AI Technician in Rural India”, monitoring of AI programme, development and conservation of indigenous breeds, streamlining storage and supply of Liquid Nitrogen, procurement of disease free high genetic merit bulls for AI, supply of breeding bulls of high genetic merit for natural service, strengthening bull mother farms, and establishment of Breeders’ Associations and Societies to encourage conservation and development of recognized indigenous breeds of the country. An allocation of ₹ 1200 crore has been made available for implementation of the scheme during 12th Plan period.



3.3.3 OBJECTIVES:

3.3.3.1 The objectives of National Programme for Bovine Breeding and Dairy Development are as under:

- a) to ensure quality Artificial Insemination services at farmers’ doorstep;

- b) to bring all breedable females under organised breeding through Artificial Insemination or natural service using germplasm of high genetic merits;
- c) to conserve, develop and proliferate selected indigenous bovine breeds of high socio-economic importance;
- d) to provide quality breeding inputs in breeding tracts of important indigenous breeds so as to prevent the breeds from deterioration and extinction;

3.3.4 COMPONENTS:

- a) Extension of AI coverage through establishment of MAITRIs and strengthening of existing AI network.
- b) Development and conservation of indigenous bovine breeds
- c) Induction of disease free high genetic merit bulls for artificial insemination and natural service.
- d) Skill development of manpower engaged in implementation of breeding programme.
- e) Streamlining liquid nitrogen transport and distribution system.

3.3.5 Status of Implementation

3.3.5.1 Actual implementation of National Programme for Bovine Breeding has been initiated from 2014-15. Upto November 2016, twenty seven projects from 27 States with the total project cost of ₹ 1077.83 crore have been approved and out of this amount of ₹ 332.91crore has been released to the States for implementation of the project including funds released under RGM.

3.3.6 Evaluation of semen stations:

3.3.6.1 In order to attain qualitative and quantitative improvement in semen production a Central Monitoring Unit (CMU) has been constituted on 20.5.2004 by the Department for evaluation and grading of semen stations once in two years. The CMU has since undertaken evaluation on six occasions. Improvement in grading of semen stations after constitution of CMU is presented in table 3.1 and state wise grading of semen stations is given at table 3.2. As per the evaluation report for 2015-16 there are 49 A & B graded semen stations in the country.

Semen Production in the country has increased from 22 million straws (1999-2000) to 97 million straws (2015-2016) and the number of inseminations has increased from 20 million to 69.29 million. Overall conception rate has increased from 20 % to 35 %

Table 3.1: Improvement in grading of semen stations

Grades	2004-05	2008-09	2010-11	2012-13	2015-16
A	2	12	20	30	35
B	12	15	17	15	14
C	12	7	3	-	-
NG	33	13	7	5	2
NE	-	2	2	2	6
Total	59	49	49	52	57

Table 3.2: State-wise distribution of semen stations with the grades awarded

(As per semen evaluation report 2015-2016)

Sl. No.	State	Grade A	Grade B	Not Graded	Not Evaluated	Total Stations
		80 & above	66 to 79	Below 65	(NE)	
1	Andhra Pradesh	1		1	1	3
2	Assam	1				1
3	Chhattisgarh	1				1
5	Gujarat	4	1			5
6	Haryana	4	1			5
7	Himachal Pradesh		1			1
8	J& K		2			2
9	Karnataka	4			1	5
10	Kerala	3				3
11	Madhya Pradesh	1				1
12	Maharashtra	3	2			5
13	Meghalaya		1			1
14	Odisha	1				1
15	Punjab	1	2			3
16	Rajasthan		2			2
17	Tamil Nadu	4	1			5
18	Telangana	1				1
18	Uttarakhand	1				1
19	Uttar Pradesh	2	1	1	1	5
20	West Bengal	3				3
21	ICAR Institutes				3	3
	Total	35	14	2	6	57

3.3.7 Minimum Standard Protocol (MSP) for Semen Production

3.3.7.1 In order to produce frozen semen of uniform quality, a Minimum Standard Protocol (MSP) for semen production was developed in consultation with experts from BAIF, NDDDB, NDRI and CFSPTI and the same was made effective. Keeping in view of the recent developments in semen processing technology, MSP for semen production being updated periodically and made available to all the semen stations in the country.

3.3.8 ISO Certification of semen stations

3.3.8.1 At present forty nine Semen stations are ISO certified. Seven semen stations located at Mattupatty, Dhoni, Kulathupuzha (Kerala), Haringhata (West Bengal), Salboni, Beldanga (West Bengal) and Bhadbhada (Madhya Pradesh) are also HACCP certified semen stations.

Pullikulum Herd



3.3.9 Training and capacity building

3.3.9.1 The most important reasons for low conception rate are lack of access to good training facilities and ill-trained government AI workers. During 2016-17 upto Nov 2016, 2126 MAITRIs, 7896 AI technicians and 286 professionals have been trained.

3.3.10 Accreditation of AI Training Institutes

3.3.10.1 Artificial Insemination Training Institutes (AITI) operate under the umbrella of State Governments, Cooperatives, NDDDB, NGOs and private agencies across the country. As AI training is one of the most important tool for delivery of AI services to the dairy farmers in the country. The quality of training imparted by AITI is essential in order to produce technicians with desired skill and competencies to undertake artificial insemination services successfully.

3.3.10.2 Quality of AI training varies across the organizations due to absence of a uniform training module, standard protocol and a mechanism to ensure its effective implementation by the training institutes.

3.3.10.3 Minimum standard Protocol (MSP) for AITIs has been developed and made effective. For effective implementation of MSP for AITI a Central Monitoring Unit has been constituted for accreditation and evaluation of AI training institutes.

3.3.11 Development and conservation of indigenous Breeds:

3.3.11.1 Indigenous bovine breeds of India are robust and possess the genetic potential to play a crucial role in the national economy. In the absence of a specific programme on development and conservation of indigenous breeds, their population has been declining and their performance is below the potential at present. Hence, there is an urgent need to take up a scientific programme for their development and conservation. For development and conservation of indigenous cattle and buffalo breeds, the following initiatives have been taken up by the Government:

Sahiwal Cow



3.3.11.2 Rashtriya Gokul Mission:

3.3.11.2.1 Rashtriya Gokul Mission has been initiated by the Department of Animal Husbandry, Dairying & Fisheries as a part of National Programme for Bovine Breeding (NPBB) in December 2014 with the aim to conserve and develop indigenous breeds in a scientific and holistic manner by setting aside ₹ 500 crores out of ₹ 1200 crores allocated under NPBB.

3.3.11.2.2 Objectives:

3.3.11.2.2.1 The Rashtriya Gokul Mission is being implemented with the objectives of: a) development and conservation of indigenous breed b) breed improvement programme

for indigenous cattle breeds to improve their genetic makeup and increase the stock c) enhancement of milk production and productivity d) upgradation of nondescript cattle using elite indigenous breeds like Gir, Sahiwal, Rathi, Deoni, Tharparkar, Red Sindhi and e) distribution of disease free high genetic merit bulls for natural service.

Kankrej Herd



3.3.11.2.3 Components:

3.3.11.2.3.1 Funds under the scheme are allocated for: a) strengthening of bull mother farms to conserve high genetic merit Indigenous Breeds b) establishment of Field Performance Recording (FPR) in the breeding tract c) assistance to Institutions/Institutes which are repositories of best germplasm d) implementation of Pedigree Selection Programme for the Indigenous Breeds with large population e) establishment of Integrated Indigenous Cattle Centres viz “Gokul Gram” f) Establishment of Breeder’s Societies: Gopalan Sangh g) distribution of disease free high genetic merit bulls for natural service h) incentive to farmers maintaining elite animals of indigenous breed i) heifer rearing programme j) award to Farmers (“Gopal Ratna”) and Breeders’ Societies (“Kamadhenu”); j) organization of Milk Yield Competitions for indigenous breeds and k) organization of Training Programme for technical and non technical personnel working at the Institute/Institutions engaged in indigenous cattle development.

3.3.11.2.4 Present Status:

3.3.11.2.4.1 Projects received from 27 States have been approved with allocation of ₹ 582.09 crore. Out of this amount of ₹ 216 crore has been released for implementation of these projects.

3.3.11.3 National Kamdhenu Breeding Centre:

3.3.11.3.1 “National Kamdhenu Breeding Centres” for development, conservation and preservation of Indigenous Breeds are being set up one in north and one in south India, as a Centre of Excellence to develop and conserve Indigenous Breeds in a holistic and scientific manner. A Nucleus Herd of all the Indigenous Bovine Breeds (40 Cattle and 13 Buffaloes), Mithun and Yak will be conserved and developed with the aim of enhancing their productivity and upgrading genetic merit. An allocation of ₹ 50 crore has been made available under the scheme.

3.3.11.3.2 The National Kamdhenu Breeding Centre, besides being a repository of indigenous germplasm, will also be a source of certified germplasm in the Country. Elite certified germplasm - in the form of bulls for artificial insemination and natural service, heifers, male and female calves, semen doses and embryos - will be made available to Farmers, Breeders, breeding organizations maintaining Indigenous Breeds.

Amount of ₹ 25 crore each has been released to Madhya Pradesh for establishment of NKBC in Northern Region and to Andhra Pradesh for establishment of NKBC in Southern region of India.

3.3.12 National Mission on Bovine Productivity:

3.3.12.1 Introduction:

The Livestock sector, besides contributing to the national economy, plays a key role in providing livelihoods to seventy million rural households. India is a global leader amongst

dairying nations and produced 155.5 million tonnes of milk in the previous year valued at more than ₹4000 billion. The dairy cooperatives of the country have the singular distinction of providing seventy five percent of their sales on the average to the farmers. In order to improve productivity and enhance milk production, thereby making dairying more remunerative to the farmers a New Scheme namely “National Mission on Bovine Productivity” has been initiated in November 2016 with an allocation of ₹ 825 crore (₹ 575.80 crore as Central Share and ₹ 249.20 crore as State Share) over a period of three years and implementation of spill over activities of the project beyond the project period. The National Mission on Bovine Productivity (NMBP) will be implemented as a part of Rashtriya Gokul Mission under Umbrella Scheme White Revolution-Rashtriya Pashudhan Vikas Yojna.

3.3.12.2 Objectives:

3.3.12.2.1 The scheme NMBP will be implemented with the following major objectives with special reference to farmers from socio-economically weaker sections and doubling their income:

- (i) To enhance milk production and productivity of bovine population by increasing population of disease free high genetic merit female population and check on spread of diseases.
- (ii) To improve quality of dairy animals, milk and milk products.
- (iii) To increase trade of livestock and livestock products by meeting out sanitary and phytosanitary (SPS) issues.
- (iv) To create e-market portal for bovine germplasm for connecting breeders and farmers, specially from socio-economically weaker sections.
- (v) To increase farmers income as a part of goal set by Hon'ble Prime Minister for doubling farmers' income by 2022.

3.3.12.3 Components of the Scheme:

3.3.12.3.1 The NMBP will be implemented with following four components:

- (i) Pashu Sanjivni: an Animal Wellness Programme encompassing provision of Animal Health cards (Nakul Swasthya Patra) along with UID identification and uploading data on National Data Base;
- (ii) Advanced breeding Technology: including Assisted Reproductive Techniques- IVF/MOET and sex sorted semen technique to improve availability of disease free high genetic merit female bovines;
- (iii) Creation of “E-Pashu Haat” an e-market portal for bovine germplasm for connecting breeders and farmers and
- (iv) National Bovine Genomic Centre for Indigenous Breeds (NBGC-IB).



3.3.13 National Action Plan for organised breeding coverage of breedable bovines and increase in milk production is annexed at Annexure- XIV-A

3.4 NATIONAL LIVESTOCK MISSION

3.4.1 For sustainable and continuous growth of livestock sector by emulating the success achieved in Dairy and Poultry sectors, across species and regions, the National Livestock

Mission was launched in 2014-15 with an approved outlay of ₹ 2,800 crore during XII Plan. This Mission is formulated with the objectives of sustainable development of livestock sector, focusing on improving availability of quality feed and fodder, risk coverage, effective extension, improved flow of credit and organisation of livestock farmers / rearers, etc. with the following four Sub-Missions:

- I. Sub-Mission on Livestock Development,
- II. Sub-Mission on Pig Development in North-eastern Region,
- III. Sub-Mission on Fodder and Feed Development,
- IV. Sub-Mission on Skill Development, Technology Transfer and Extension.

3.4.2 It broadly covers all the activities required to ensure quantitative and qualitative improvement in livestock production systems and capacity building of all stakeholders. The major outcomes of the Mission envisaged are mainstreaming of livestock rearing as business models and linkages for successful business ventures to achieve 5-6% annual growth rate, optimal utilization of scarce nutritional resources – reducing the gap in demand and availability of fodder, conservation and improvement of indigenous breeds, higher productivity and production in a sustainable and environment friendly manner, enhanced livelihood opportunities, especially in rainfed areas and for landless, small and marginal farmers, increased awareness, improved risk coverage and better availability of quality animal products to consumers overall socio-economic upliftment of livestock rearers.

Following are the main activities under the above four sub Mission of NLM

3.4.3 Sub-Mission on Livestock Development:

3.4.3.1 Risk Management and Insurance

3.4.3.1.1 The objective of the Risk Management

& Insurance as component of sub-mission on livestock development of NLM is to management of risk and uncertainties by providing protection mechanism to the farmers against any eventual loss of their animals due to death and to demonstrate the benefit of the insurance of livestock to the people.

3.4.3.1.2 The 'Risk Management & Insurance' as component of sub-mission on livestock development of NLM is being implemented in all the Districts of the Country from 21.05.2014 and in case if new Districts are carved out of the existing Districts, than the new districts will also be covered. The indigenous / crossbred milch animals, pack animals (Horses, Donkey, Mules, Camels, Ponies and Cattle/ Buffalo. Male) and other livestock (Goat, Sheep, Pigs, Rabbit, Yak and Mithun) will be under the purview of the 'Risk Management & Insurance'. Benefit of subsidy is to be restricted to 5 animals per beneficiary per household for all animals except sheep, goat, pig and rabbit. In case of sheep, goat, pig and rabbit the benefit of subsidy is to be restricted based on 'Cattle Unit' and one cattle unit is equal to 10 animals i. e. for sheep, goat, pig and rabbit. Therefore the benefit of subsidy to sheep, goat, pig and rabbit is to be restricted to 5 'Cattle Unit' per beneficiary per house hold. If a beneficiary has less than 5 animals / 1 Cattle Unit can also avail the benefit of subsidy.

3.4.3.1.3 The funds under the scheme are being utilized for payment of premium subsidy, Honorarium to the Veterinary practitioners and Publicity. An amount of ₹. 43.80 crore has been released to States/UTs and 6.00 lakh animals have been insured during 2016-17 up to December, 2016.



3.4.4 Poultry

3.4.4.1 Poultry Development has been a household activity in India. Through policy interventions by Government and enterprise of private players, poultry farming has transformed into a very scientific operation. Poultry continues to be one of the fastest growing subsectors of Animal Husbandry.



The Government of India is implementing the National Livestock Mission (NLM) and following components related to Poultry are covered under NLM:

3.4.4.2 Modernisation and Development of Breeding Infrastructure

3.4.4.2.1 Central Farms: Central Poultry Development Organizations

3.4.4.2.1.1 Central Poultry Development Organisations (CPDOs) located at four regions viz. Chandigarh, Bhubaneswar, Mumbai and Bengaluru have been playing a pivotal role in the implementation of the policies of the Government with respect to poultry. The mandate of these organizations is to focus on improved variety of birds for backyard poultry which can survive at the farmer's doorstep, provide basic training to backyard poultry farmers and conduct feed analysis. CPDOs are also promoting diversification with species other than poultry, like ducks etc.



3.4.4.2.1.2 Kalinga Brown, Kaveri, Chhabro and Chann are the varieties / strain of Low Input Technology birds (Chicken) developed by these CPDOs. Based on demand they supply hatching eggs, Day old chick of parent / commercials of these varieties to the States / UT's and individual farmers. Besides they also maintain indigenous varieties like Kadaknath, Aseel etc. to promote breed conservation.

3.4.4.2.1.3 CPDOs are also promoting diversification with species other than poultry like ducks, Japanese quail, Turkey and Guinea fowl. White Pekin (meat type) and Khaki Campbell (egg type) are the duck varieties maintained by CPDO, Bengaluru to supply to the various States based on demand.



3.4.4.2.1.4 In these CPDOs, training is imparted to the farmers and a training module for training of Poultry farmers/ Entrepreneurs has been devised and followed at these CPDOs. The poultry production course curriculum includes practical sessions and demonstration of poultry farming activities including brooding arrangements, feeding, watering, vaccination, medication etc. and other management aspects apart from tips on feed mill management and hatchery management. Training is also given for basic economics in poultry farming with special reference to obtaining financial assistance (bank loan) through funds from nationalized banks. The farmers are also briefed about viable projects of commercial poultry farming with various models in different regions.



3.4.4.2.1.5 CPDO & Training Institute (CPDO&TI), Hessarghatta is also imparting Trainers' training to in-service personnel from within the country as well as overseas. Regular poultry management courses and tailor-made specialized, advanced and laboratory courses

are available at this institute. CPDO&TI has opened a Skill Development and Training Centre exclusively for training purpose. This organisation (CPDO & TI) is accredited with ISO 9001:2008 by Bureau of Indian Standards since 2005. The institute is also taking steps to align with the National Skill Development framework.



3.4.4.2.1.6 CPDOs are also doing feed analysis for all animal feed. Three CPDOs at Bhubaneswar, Mumbai and Hessarghatta have Near Infra-Red (NIR) Spectrophotometer to analyse feed samples. Automation System for feeding and watering the birds is being done at Hessarghatta, Chandigarh and Bhubaneswar.

3.4.4.2.1.7 The Central Poultry Performance Testing Center (CPPTC), located at Gurgaon is entrusted with responsibility of testing the performance of layer and broiler varieties. This Centre gives valuable information relating to

different genetic stock available in the country. One layer and two broiler tests are usually initiated in a year.



3.4.4.2.1.8 During the year 2016-17, so far around 0.57 lakh & 11.05 lakh no. of parent chicks and commercial chicks respectively have been supplied by the CPDOs. Around 1,455 no. of farmers and trainers have been trained and around 2,766 no. of feed samples have been analyzed.



Employment generation, nutritional security and economic prosperity through poultry keeping

3.4.4.2.2 Strengthening of Breeding infrastructure of State/University farms

3.4.4.2.2.1 The Government of India is strategically bringing in technological interventions in the areas of bio-security, automation and modernization of Infrastructure in various Central / State Government poultry farms through the National Livestock Mission. This component of the NLM aims at strengthening existing State poultry farms so as to enable the flow of suitable germplasm from the Research Institutions / Laboratories to the grassroots level alongwith other technical services like capacity building, developing and implementing package of practices at the ground level for different types of poultry system including family poultry system for supplementary income generation and family nutrition.

3.4.4.2.2.2 During this year so far 7 State Poultry farms (Karnataka-1, Madhya Pradesh-2, Meghalaya-3 and Odisha-1) have been assisted under this component with the Central Share of Rs.236.39 lakh).

3.4.4.2.3 Interventions towards Productivity enhancement

3.4.4.2.3.1 Rural Backyard Poultry Development: This component is envisaged to cover beneficiaries from BPL families to enable them to gain supplementary income and nutritional

support. The SHGs/ NGOs, entrepreneurs may take up mother unit activity which will procure the day old chicks either from the State Poultry Farms or from the private hatchery and will rear the birds upto 4 weeks of age. This scheme component aims at supporting BPL beneficiary families wherein 4-week old chicks, suitable for rearing in the backyard, reared at the 'mother units' are further distributed to them in batches. Further, provision is there to raise the birds in a bio-secure manner for night-shelter etc. Under this programme so far funding of ₹ 3,977.95 lakh has been done to cover around 1,78,643 BPL beneficiaries. A number of 284 Mother Units has been also established for raising day old chicks.

3.4.4.2.3.2 An Android App for Poultry services

3.4.4.2.3.2.1 To keep abreast with the modern technology and modernize the interface, CPDO&TI, Hessarghatta, Bengaluru has developed an android App for training facilities, lab services and product booking of chicken and ducks. With the help of this App one can book for training, lab services and product booking from anywhere in India and even from abroad for foreign trainees. The participant will get an email confirmation and SMS for registration. On the right side of the App an option is given to directly access the website of CPDO&TI for detailed information about the Institute and the services provided. This app can be downloaded free of cost from Google Play Store by typing "CPDO&TI".

3.4.4.2.3.3 World Egg Day 2016

3.4.4.2.3.3.1 The Department of Animal Husbandry, Dairying and Fisheries, Government of India has facilitated celebration of the "World Egg Day" on 14th October 2016 to increase awareness about the nutritive value of eggs and highlighting its importance in human nutrition. (This was celebrated regionally and also centrally at New Delhi).

3.4.4.2.3.3.2 Department of Animal Husbandry, Dairying and Fisheries, Government of India facilitated organizing this event by involving all stakeholders and Poultry Associations like National Egg Coordination Committee, Poultry Federation of India, All India Poultry Breeders' Association, Indian Federation of Animal Health Companies, Compound Livestock Feed Manufacturers' Association, Indian Poultry Equipment Manufacturers' Association etc. to spread valuable information and knowledge about the nutritive value of egg. Around 250 poultry farmers were invited.

3.4.4.2.3.3.3. There was also release of an Egg Recipe booklet and a booklet on farmers' success stories- "EggPreneurs". Awards were presented to the biggest layer farmers, best egg powder exporters, best egg exporter and best processed chicken exporters. Cheques/ sanction orders were distributed to 5 entrepreneur beneficiaries under the Poultry Venture Capital Fund - Entrepreneurship Development and Employment Generation component of National Livestock Mission.



3.4.4.2.4 Small Ruminants, Meat and Pig

3.4.4.2.4.1 Sheep and Goats are important species of livestock for India. They contribute greatly to the agrarian economy, especially in areas where crop and dairy farming are not economical, and play an important role in the livelihood of a large proportion of landless as well as small and marginal farmers. Piggery on

the other hand is still at its infancy and is being given due attention for its development.

3.4.4.2.4.2 Keeping in mind the various challenges, Government of India has emphasized the technological advancement and growth of these sectors through the National Livestock Mission.

3.4.4.2.4.3 The components under National Livestock Mission to develop the Small Ruminant & Pig are as follows:

3.4.4.2.5 Central Farm : Central Sheep Breeding Farm, Hisar (Haryana)

3.4.4.2.5.1 The farm was established in 1969-70 in collaboration with the Government of Australia under Colombo Plan during the

Fourth Five Year Plan with the objectives of producing acclimatized exotic rams for distribution to various State Sheep farms and training of personnel in Sheep Management and Mechanical Sheep Shearing. Presently the farm is keeping Nali X Rambouillet and Sonadi X Corriedale crosses, as well as Beetal goats.

3.4.4.2.5.2 During 2016-17, the farm supplied 303 rams and 11 bucks to different State agencies and farmers. In addition, a total of 25 farmers were trained in sheep management and production, while another 90 farmers were trained in machine shearing techniques and 666 nos of farmers have been trained under one day training programme till 15th December, 2016.



One day training programme for farmers at CSBF, Hisar.



Training programme on Sheep Shearing and 6 day Training programme for entrepreneurs at CSBF, Hisar.

3.4.4.2.5.3 Strengthening of breeding infrastructure of State / University farms

3.4.4.2.5.3.1 During 2016-17, three State Goat farms were assisted to strengthen and modernize their set-up and infrastructure. These farms include Goat Farm at Odisha, Telengana and West Bengal and funds to the tune of ₹.37.53 lakhs, ₹.29.04 lakhs, ₹.36.30 lakhs, respectively, have been released to these farms.

3.4.4.2.5.3.2 During 2016-17, an amount of ₹.290.40 lakh has been released to the State of Punjab for Strengthening of 2 Government Pig Farms and for setting up of 1 Swine Semen Processing Lab at Nabha.

3.4.5 Interventions towards productivity enhancement

3.4.5.1 Under the Sub-component – Propagation of Artificial Insemination (A.I.), during 2016-17, an amount of ₹.16.462 lakh was released as second installment to Palampur, Himachal Pradesh, and ₹.49.73 lakh released as last installment to Nimbkar Agricultural Research Institute (NARI), Maharashtra.

3.4.5.2 During 2016-17, under Sub-component – Cluster based mass de-worming/ health cover programmes, ₹ 243 lakh was released to the State of Chhattisgarh to cover 3 lakh nos of animals.

3.4.6 Sub-Mission on Pig Development in North-Eastern Region

3.4.6.1 There has been persistent demand from the North Eastern States including Sikkim seeking support for the all- round development of pigs. Therefore, in the North Eastern Region, pig development is being implemented as a Sub- mission of the NLM.

3.4.6.2 During the year 2016-17, a total of 7 pig farms were assisted for strengthening i.e. 2 in Manipur, 1 in Meghalaya, 2 in Mizoram and 2

in Nagaland and funds to the tune of ₹ 133.398 lakh, ₹ 45.0 lakh, ₹ 117.99 lakh and ₹ 90.0 lakh respectively, have been released.

3.4.6.3 Under health cover, during 2016-17, amounts of ₹85.5 lakh to cover 1.4 lakh nos of animals in Meghalaya, ₹ 54.0 lakh to cover 3 lakh nos of animal in Mizoram and ₹ 81.0 lakh to cover 5 lakh nos of animal in Nagaland, have been released.

3.4.6.4 In addition, during 2016-17, for importing 225 nos of germplasm, funds amounting to ₹ 40.5 lakh were released to Nagaland.

3.4.7 Entrepreneurship Development and Employment Generation (EDEG)

3.4.7.1 Under the Sub-mission of Livestock Development of NLM, the Component-Entrepreneurship Development and Employment Generation (EDEG), an amount of ₹ 6,600.00 lakh has been released to NABARD to channelize the funds for establishment of poultry, pig and sheep/ goat rearing & breeding units in various States to encourage entrepreneurship development.

3.4.7.2 Till November, 2016, a total number of 4,964 beneficiaries have been assisted for establishment of poultry (1,482), sheep/ goat (3,468) and piggery (14) units for Entrepreneurship Development and Employment Generation among women, poor and marginal farmers.

3.4.8 Fodder and Feed Development:

3.4.8.1 To overcome the shortage of feed and fodder and to improve the nutritive value, this department is implementing the sub-mission on Feed and Fodder Development. It is to mention that India with only 2.29% of the land area of the world, is maintaining about 10.71% of the livestock population of the world.

Fodder Oats Cultivation



3.4.8.2 The nutritive value of feed and fodder has a significant bearing on productivity of livestock. The major reasons for shortage of feed and fodder are, increasing pressure on land for growing food grains, oil seeds and pulses, adequate attention has not been given to the production of fodder crops. Further, on account of diversified use of agricultural residues, the grazing lands are gradually diminishing. The area under fodder cultivation is also limited. Majority of the grazing lands have either been degraded or encroached upon restricting their availability for livestock grazing. The area under fodder cultivation is only about 4% of the cropping area, and it has remained static for long period of time. Owing to the importance of food crops and other cash crops it is very unlikely that the area under fodder cultivation would increase substantially.

3.4.8.3 Though the availability of feed and fodder has improved in the last decade, still a lot is required to be done to bridge the gap between the demand and availability of fodder in the country, particularly during the lean periods and crisis situations.

Azolla Cultivation



3.4.8.4 To overcome the shortage of feed and fodder and to improve the nutritive value this department has included a sub-mission on Feed and Fodder Development in the National Livestock Mission from 2014-15 onwards. The component wise Physical achievement during the year 2016-17 (upto 31st December, 2016) is placed at Table 3.3. An amount of ₹ 32.18 crore has been released for the year 2016-17 up to December, 2016 under the Sub-mission

Maize-African Tall



3.4.8.5 Further, under the National Livestock Mission there are Eight Regional Fodder Stations which are located in different agro-climatic zones of the country with the following objectives.

- a) Introduction of fodder crops in existing crops rotation.
- b) Demonstration of superior package of practices for use of fertilizers, water and soil management in production of cultivated fodder crops, studies of these practices with regards to new and promising species of fodder crops and grasses.
- c) Evolution of fodder calendars suitable to the region.
- d) Demonstration for improvement and management of village grazing land and natural grass land and study their proper utilization in combination with forage crops.
- e) Demonstration of different methods of fodder conservation and utilization.

- f) Production of high quality foundation seeds of forage crops for further multiplication and distribution.
- g) Conducting training programmes to educate State Government officials and dairy farmers.
- h) Organizing farmers' fair/field days.

3.4.8.6 The Eight Regional Fodder Stations are at Hessarghatta, Bengaluru (Karnataka), Mamidipally, Hyderabad (Andhra Pradesh), Dhamrod Surat (Gujarat), Hisar (Haryana), Suratgarh (Rajasthan), Suhama (Jammu & Kashmir), Alamadhi (Tamil Nadu) and Kalyani (West Bengal).

Fodder seeds Distribution programme



3.4.8.7 These stations have produced 235 tonnes of fodder seeds, conducted 8920 demonstrations, and organized 96 training programmes and 86 farmers' fairs/field days, during this financial year till November, 2016.

3.4.9 Sub-Mission on Skill Development, Technology Transfer and Extension:

3.4.9.1 Under National Livestock Mission (NLM), a Sub Mission on Skill Development, Technology Transfer & Extension has been launch with the objective to adoption of new technologies and practices require linkages between stakeholders. The sub-mission will provide a platform to develop, adopt or adapt the technologies including frontline field demonstrations in collaboration with farmers, researchers and extension workers, etc. wherever it is not possible to achieve this through existing arrangements.



Pandit Deen Dayal Upadhyay Krishi Unnati Mela, 2016



India International Trade fare

The Components of the Sub Mission are IEC Support for Livestock Extension, Training and capacity Building, Livestock Farmers Groups/Breeder's Association, Organization of Livestock Mela / Show, Regional Livestock fair, Operationalisation of Farmers Field Schools, Exposure Visit for livestock Extension

facilitators, Exposure Visit of farmer and Staff component of livestock Extension.

An amount of ₹ 3.56 crore has been released for the year 2016-17 up to December, 2016 under Sub-mission of Skill Development, Technology Transfer and Extension

Table 3.3 Component wise Physical achievement under National Livestock Mission –Submission on Feed and Fodder Development during the year 2016-17.

S. No	Name Components	Beneficiaries	Physical Achievement upto 31.12.16
1	Forage production from Non-forest wasteland /rangeland/ grassland /non-arable land (ha)	State Department of Animal Husbandry / Agriculture / Forest, Milk Cooperatives / Federations, Gaushalas. However, funds will be released through State Government.	365
2	Forage production from Forest Land (ha)	Forest Department of the State / UT	100
3	Fodder seed production/ procurement and distribution (MT)	Department of Animal Husbandry/ Agriculture of the States. States may involve NGOs, SHGs, Corporations, Milk Cooperatives/ Federation / Central and State Agriculture or Veterinary Colleges / Universities for supply of seeds.	295.00
4 (i)	Distribution of hand driven chaff cutters (No.)	Farmers and Members of Milk Cooperatives	600
(ii)	Distribution of power driven chaff cutters (No.)	Farmers and Members of Milk Cooperatives	7522
(iii)	Establishment of high capacity Fodder Block Making units (No.)	Animal Husbandry Department, Milk Federations, University, Research Institutes, Private Entrepreneurs and NGOs	--
(iv)	Distribution of low capacity, tractor mountable Fodder Block Making units/ Hey Bailing Machine/ Reaper/Forage Harvester (No.)	Village Panchayats / Primary Milk Cooperatives / Joint Forest Management Committees through the concerned State Department. Funds will be released through State Governments concerned.	--

(v)	Establishment of Silage making units (No.)	Farmers (including Members of Milk Federation)	1495
(vi)	Establishment of Bypass protein/ fat making units (No.)	Animal Husbandry Department, Milk Federations, University, Research Institutes, Private Entrepreneurs and NGOs	--
(vii)	Establishment of area specific mineral mixture / feed processing units (No.)	Govt. bodies / Universities / Corporations / Boards, including Milk Federations	--
(viii)	Establishment / modernization of Feed testing laboratories (No.)	Veterinary colleges, Agriculture Universities, Milk Federations, Animal Husbandry Department. However, funds will be released through State Govts concerned.	2

3.4.10 National Action Plan- National Livestock Mission

3.4.10.1 The proposed objectives under National Livestock Mission (NLM) are Sustainable growth of livestock and poultry for nutritional security and economic prosperity. The action plan for the 3 years under National Livestock Mission including physical and financial phasing from 2017-18 to 2019-20 are given at Annexure XIV-B

Brief of the actions to be taken subject to availability of budget are as follows:

3.4.10.2 Double the productivity of goat and sheep for milk, meat and wool by selective breeding:

3.4.10.2.1 Sheep and Goats are important species of livestock for India. They contribute greatly to the agrarian economy, especially in areas where crop and dairy farming are not economical, and play an important role in the livelihood of a large proportion of landless as well as small and marginal farmers.

3.4.10.2.2 In the 2012 Livestock Census, the population of Sheep is 65 million and Goat is 135 million; there is a decrease in population of Sheep by 9% and Goat by nearly 4% from the 2007 Livestock Census. This has been attributed

to more culling/death than the male goats/sheep produced due to increasing demand of meat in the country as compared to the available progeny from the natural reproduction rate. The long term consequence of this would be shortage of goat and sheep meat which in turn has impact on the nutritional requirement fulfillment of the country's population.

3.4.10.2.3 Thus, to increase the meat, milk and wool production, breed improvement even while increasing the farmers income in case of indigenous breeds and upgrading through imported germplasm in case of non descript small ruminants through breed Improvement of the goat and sheep with focus on separate identified breeds for meat, milk and wool production, Importing germplasm of suitable genetic traits for higher meat, milk and wool production

3.4.10.3 Transform Backyard Poultry to commercial economic model

3.4.10.3.1 Already Private Industry and NABARD encourage economically viable/ bankable projects, wherein the scale is much higher and so, beyond the reach of small and marginal/ BPL farmers. The goal is to bring these landless, small and marginal farmers into mainstream of economic activity.

3.4.10.3.2 Presently, we have a component under National Livestock Mission (NLM), namely, Rural Backyard Poultry Development (RBPD) which covers beneficiaries from BPL families to enable them to gain supplementary income and nutritional support. Under RBPD, the chicks/ birds suitable for rearing in the backyard are reared in the mother units upto 4 weeks and are further distributed to the BPL beneficiaries in atleast two batches.

3.4.10.3.3 It is proposed to move incrementally from this subsistence model of backyard poultry farming to a scaled-up entrepreneur model, upscaling incrementally upto 200-400 birds. In case of Low-input technology (LIT) birds, these would help in transition and upscaling later to 1,000-2,000 birds for larger commercial scale Poultry farming. Similarly, it is also envisaged to introduce smaller scale broilers in rural households for later scaling up to commercial scale and have Poultry as a mainstream source of income.

3.4.10.4 Fodder Development in the country

3.4.10.4.1 Department of Animal Husbandry, Dairying and Fisheries (DADF), Government of India has taken necessary steps to increase fodder production in various parts of the country by providing financial assistance to the States / UTs under Centrally Sponsored National Livestock Mission with a Sub Mission on Feed and Fodder Development.

3.4.10.4.2 The focus is to improve Gauchar lands in the country for increasing the availability of Fodder and Grasses. The Common Property Resources (Gauchar) at present are either degraded or encroached, thereby not serving the desired purpose. A drive has been launched by sensitising the State Governments to develop these gauchar lands.

3.4.10.4.3 Attention is also being paid to conserve surplus crop residue to meet the shortage of fodder during the lean seasons, draught, flood etc.

3.4.10.5 Animal Insurance:

3.4.10.5.1 Attention is also being paid, to insure the animals of poor farmers, as per availability of budget.

3.5 Livestock Health

3.5.1 With improvement in the quality of livestock through cross-breeding programmes, the susceptibility of these livestock to various diseases including exotic diseases has increased. In order to reduce morbidity and mortality, efforts are being made by the State/Union Territory Governments to provide better health care through Polyclinics/Veterinary Hospitals, Dispensaries and First-Aid Centers including Mobile Veterinary Dispensaries available in the states which actively reducing the disease outbreaks in the country. The State-wise list of veterinary Institutions is given at Annexure-XI. In order to provide referral services, over and above the existing disease diagnostic laboratories in the States, one Central and five Regional Disease Diagnostic Laboratories have been established which are now fully functional. Further, for control of major livestock and poultry diseases by way of prophylactic vaccination, the required quantity of vaccines are being produced in the country at 27 veterinary vaccine production units including 20 in public sector.

3.5.2 While efforts are made to ensure better livestock health in the country, efforts are also being made to prevent ingress of diseases from outside the country, and to maintain standards of veterinary drugs and formulations. At present, the Drugs Controller General of India regulates the quality of veterinary drugs and biologicals in consultation with this Department. The following schemes are being implemented in respect of Livestock Health for prevention, control and containment of animal diseases.

3.6 Directorate of Animal Health

3.6.1 Animal Quarantine and Certification Service

3.6.1.1 The objective of this service is to prevent ingress of livestock diseases into India by regulating the import of livestock and livestock related products, and providing export certification of International Standards for livestock & livestock products, which are exported from India. There are six quarantine stations in the country, out of which four, located at New Delhi, Chennai, Mumbai and Kolkata are operating smoothly from their own premises, which also include a small laboratory. Two other new Animal Quarantine Stations at Hyderabad and Bangalore are currently operating from the airport offices where, the import of Grand Parent (GP) stock of poultry, pets, laboratory animals and livestock products has already commenced. The establishment of Quarantine Stations at Hyderabad is under construction and Bangalore station is near to the completion stage. The scheme helped to prevent the entry of exotic diseases like Mad-cow disease (BSE), African swine fever and contagious equine metritis. Details of the activities of the Animal Quarantine and Certification Service Stations during 2016-17 (up to December, 2016) are given at Annexure-XII.

3.6.2 National Veterinary Biological Products Quality Control Centre, Baghpat

3.6.2.1 Chaudhary Charan Singh National Institute of Animal Health has been established at Baghpat, Uttar Pradesh to undertake the quality control and assurance of standard, efficient and safe veterinary biologicals in India and to act as a nodal institute to recommend licensing of veterinary vaccines in the country with a vision to promote healthy and productive livestock in Indian subcontinent using standard, efficient and safe veterinary biologicals. During the period under report, following activities are being carried out:

1. Standard Operating Protocols as per Indian Pharmacopoeia 2014 for quality control testing of different veterinary

vaccines have been revised and expanded with details of test and steps involved.

2. One day Brain Storming Workshop on “Harmonization of Production and Quality Control of Veterinary Biologicals in India” was convened by the institute at NASC complex New Delhi, on June, 24th 2016. The workshop was presided over by the Secretary, ADF, Govt. of India.
3. The expert committees to develop uniform Standard Operating Procedure (SOP) for 13 vaccines were constituted and the development of uniform sop by the committee is under process. The expert lab for networking has been identified.
4. The process of adverse veterinary reporting system was initiated and a proforma was developed and uploaded on website for reporting the adverse reaction.
5. The institute website <http://ccsniah.gov.in> was launched after security audit, as per the government norms.
6. Institute has obtained ISO 9001:2015 certificate and preparedness has been initiated for ISO 17025 in terms of documentation and working.
7. Biological Production Units of various States and the Directors of these veterinary services have been requested to deliver the vaccine samples for quality control testing at the Institute for internal standardization and optimization of the revised protocols. Eighteen batches of the vaccines (HS, BQ, RD, PPR and Goat Pox) have been received from Gujarat, Madhya Pradesh, Haryana, Karnatka, Rajasthan, and West Bengal and all have been processed for QC testing.
8. The IBSC and IAEC meetings were

conducted for statutory clearances of biological work in the institute.

9. Following cultures of bacteria, fungi and viruses are being maintained:

Sl. No.	Name of the bacteria / fungi
1	Salmonella Abortusequi
2	Clostridium perfringens type-D
3	Clostridium chauvoei 49
4	Clostridium septicum 51
5	Pasteurella multocida P52
6	Pasteurella multocida (LKO)
7	Bacillus subtilis
8	Staphylococcus aureus subsp. aureus
9	Pseudomonas aeruginosa
10	Aspergillus brasiliensis
11	Candida albicans
14	Ranikhet disease virulent virus

10. Database of all the veterinary vaccine producers in India has been prepared. Linkages with Indian Veterinary institute and National research Centre on Equines/Veterinary Type Culture Collection (ICAR), Indian Pharmacopeia Commission (IPC) and National Institute of Biologicals (NIB), Noida and state biologicals has been initiated for exchange of information and know how through dialogue and exposure visits of the officers.
11. Officers on behalf of the Institute and in coordination with KVKs and NGOs participated in extension activity in villages Sikhera, Silver Nagar Dhanaura and Bijraul to create awareness amongst the stakeholders.
12. A one day workshop on “Animal Husbandry New Prospective” was organized at CCSNIAH in collaboration of Bhartiya Krishak Samaj and All India Farmers welfare. More that 300 stake holders participated in the workshop.
13. Officers of the institute participated at Krishi Unnati Mela, Pusa Delhi, Agri-Mela Mathura, Purvanchal Krishi Pradarshini Gorakhpur, Regional Agri-Fair 2016 Muzaffarnagar, and IITF 2016, Agriculture pavilion, New Delhi.
14. Trainings to the officers were imparted on Lab Animal House Management at NIB, Noida; Basic Epidemiology under USDA sponsored course at RDDI Bangalore; Veterinary Diagnostic Laboratory Quality Assurance by USDA at University of Delaware, Delaware and Animal Welfare issues by CPCSEA at NIAW, Faridabad.
15. Public Finance Management System was adopted in the office.
16. Officers of the institute participated in various Annual Scientific conferences.
17. Plantation of 1563 trees was done in the campus in collaboration with Forest Department, Baghpat.
18. Public Awareness fortnight campaign from 16.10.16 – 31.10.16 under Swachhh Bharat Abhiyan was carried out enthusiastically by all the staff and officers of the Institute, in different villages near the Institute and primary schools Sisana whereby information regarding benefits of washing hands, personal hygiene, environmental hygiene, food hygiene and water hygiene was imparted.
- All officers contribute two hours weekly under Swachhh Bharat Mission by taking up cleanliness activities in and around the Institute campus. Active participation of all permanent employees and contractual manpower is ensured.

3.6.3 Central/Regional Disease Diagnostic Laboratories

3.6.3.1 In order to provide referral services over and above the 250 existing disease diagnostic laboratories in the States, one Central and five Regional Disease Diagnostic Laboratories have been set up by strengthening the existing facilities. The Centre for Animal Disease Research and Diagnosis (CADRAD) of Indian Veterinary Research Institute, Izatnagar is functioning as Central Laboratory. The Disease Investigation Laboratory, Pune, Institute of Animal Health and Veterinary Biologcials, Kolkata, Institute of Animal Health & Biologcials, Bangalore, Animal Health Institute, Jalandhar and Institute of Veterinary Biologcials, Khanapara, Guwahati are functioning as referral laboratories for Western, Eastern, Southern, Northern and North-Eastern regions respectively. The laboratories at NRDDL (Jalandhar), SRDDL (Bangalore), ERDDL (Kolkata) and CDDL (Izatnagar) have been strengthened with pre-fabricated BSL-III laboratories while a mobile BSL-III laboratory has been provided to NERDDL, Guwahati. These RDDs have been of great help to the country for surveillance and diagnosis of various livestock and poultry diseases including Avian Influenza.



3.7 Livestock Health & Disease Control

3.7.1 In order to effectively tackle the issue of livestock health, the Department is supplementing the activities of the State Governments / Union Territories by way of providing assistance through 'Livestock Health & Disease Control Scheme (LH&DC). During 2015-16, the scheme has been categorized

under State plan with change funding pattern. Now, the scheme has been clubbed under umbrella scheme "White Revolution - Rastriya Pashudhan Vikas Yojana" as "Veterinary Services" and funding pattern has been changed to 60:40 between Centre and State (90:10 for the 8 North Eastern and 3 Himalayan States and UT's 100%. The scheme is having following components:

- (a) Assistance to States for Control of Animal Diseases (ASCAD)
- (b) Professional Efficiency Development (PED)
- (c) National Project on Rinderpest Surveillance & Monitoring (NPRSM)
- (d) Foot and Mouth Disease Control Programme (FMD-CP)
- (e) National Animal Disease Reporting System (NADRS)
- (f) Peste des Petits Ruminants Control Programme (PPR-CP)
- (g) Brucellosis Control Programme (Brucellosis - CP)
- (h) Establishment and Strengthening of existing Veterinary Hospitals and Dispensaries (ESVHD).
- (i) Classical Swine Fever Control Programme (CSF-CP).

The details of the components are as under:

3.7.2 Assistance to States for Control of Animal Diseases (ASCAD)

3.7.2.1 Under this component, assistance is provided to State/Union Territory Governments for control of economically important diseases of livestock and poultry by way of immunization, strengthening of existing State Veterinary Biological Production Units, strengthening of existing Disease Diagnostic Laboratories and in-service training to Veterinarians and Para-veterinarians. Under this programme funds are also provided for immunization against canine

rabies and control of endo-parasites in cattle & buffaloes. The state biological production units are also being strengthened to make them GMP compliant under this scheme.

3.7.2.2 As against BE of ₹ 250.00 crore and RE of ₹ 245.45 crore under LH&DC scheme during 2016-17, an amount of ₹ 30.35 crore has been released till 31st December, 2016 for implementation of ASCAD component. Under this programme, during 2016-17, about 165 million vaccinations have been carried out (till December, 2016) against the target of 250 million. Besides this, the programme envisages collection of information on the incidence of various livestock and poultry diseases from States and Union Territories and compiling the same for the whole country. The information compiled at headquarter is notified to World Organization for Animal Health (OIE) on every six monthly basis. Incidence of diseases of livestock and Poultry in India during year 2016 is at Annexure-XIII.

3.7.3 Professional Efficiency Development (PED)

3.7.3.1 Professional Efficiency Development envisages establishment of Veterinary Council of India at Centre and State Veterinary Council at State level in those States/Union Territories, which have adopted the Indian Veterinary Council Act, 1984. The objective of the Scheme is to regulate veterinary practice, the maintenance of Register of veterinary practitioners. Towards this purpose, there is a provision of setting up of Veterinary Council of India in centre and State Veterinary Councils in all States/UTs where Indian Veterinary Council Act, 1984 have been extended. Presently, all States except Jammu & Kashmir and all UTs have adopted the Indian Veterinary Council Act, 1984.

Subsequent to enactment of the Act, the Central Government (Ministry of Agriculture) vide Gazette Notification S.O. No. 2051 dated 2nd August, 1989, for the first time constituted the Veterinary Council of India by nominating the

Members as per the provisions of Section 3 of the IVC Act, 1984 read with Section 4 thereof and rule 23 of Indian Veterinary Council Rules, 1985 as per notification dated 23rd April, 1985.

3.7.4. National Project on Rinderpest Surveillance and Monitoring (NPRSM)

3.7.4.1 The main objective of the scheme is to strengthen the veterinary services to maintain required vigil to sustain the country's freedom from Rinderpest & Contagious Bovine Pleuropneumonia (CBPP) infection secured in May, 2006 and May, 2007 respectively.

Under the programme, surveillance of various animal disease including Syndromic diseases with more focus on Contagious Bovine Pleuropneumonia (CBPP) and Bovine Spongiform Encephalopathy (BSE) are being undertaken throughout the country to maintain India's freedom status from these diseases. This physical surveillance is done with the help of the staff of Animal Husbandry Department of the States & Union Territories to maintain the freedom status.

As against BE of ₹ 250.00 crore and RE of ₹ 245.45 crore under LH&DC scheme during 2016-17, an amount of ₹ 0.86 crore has been released till 31st December, 2016 for implementation of NPRSM component. The freedom status of these diseases is maintained.

3.7.5 Foot & Mouth Disease Control Programme (FMD-CP)

3.7.5.1 To prevent economic losses due to Foot and Mouth Disease and to develop herd immunity in cloven-footed animals, a location specific programme called 'Foot and Mouth Disease Control Programme (FMD-CP)' is being implemented in 351 specified districts covering 13 States and 6 Union Territories i.e. Andhra Pradesh, Telangana, Maharashtra, Kerala, Tamil Nadu, Gujarat, Punjab, Haryana, Uttar Pradesh, Karnataka, Goa, Rajasthan, Bihar, Puducherry, Delhi, Andaman & Nicobar, Dadar & Nagar Haveli, Daman & Diu and Lakshadweep.



Based on the effective implementation of the FMD Control Programme, India has established three zones as 'FMD free Zones where vaccination is practiced', as per World Organization for Animal Health (OIE) guidelines and dossier has been submitted to OIE for their recognition.

3.7.5.2 Funds are provided for cost of vaccine, maintenance of cold chain and other logistic support to undertake vaccination. The State Governments are providing other infrastructure and manpower.

3.7.5.3 As against BE of ₹ 250.00 crore and RE of ₹ 245.45 crore under LH&DC scheme during 2016-17, an amount of ₹ 168.22 crore has been released till 31st December, 2016 for implementation of FMD-CP component. During 2016-17, as against target of 195 million vaccinations, about 172.16 million vaccinations have been carried out till December, 2016.

During 2016-17, efforts have also been made to release funds under RKVY scheme for FMD control for the remaining sixteen states and one UT which are not covered under FMD-CP.

3.7.6 National Animal Disease Reporting System (NADRS)

3.7.6.1 In order to streamline the system of animal disease reporting from States/UTs, a web based Information Technology system for reporting the diseases from the field level has been implemented known as National Animal Disease Reporting System (NADRS). It is a part of the Centrally Sponsored Scheme, "Livestock

Health and Disease Control" and has been executed through National Informatics Centre (NIC). The main objective of NADRS is to record and monitor livestock disease situation in the country with a view to initiate preventive and curative action in a timely and speedy manner. The NADRS involves a computerized network, linking each Block, District and the State/UT Headquarters in the country to the Central Project Monitoring Unit in the Department of Animal Husbandry, Dairying and Fisheries at New Delhi. NADRS is a web based System which will report the occurrence of animal diseases data from the Block & District level Veterinary Units.

3.7.6.2 Central Project Monitoring Unit (CPMU) for analyzing the animal disease data received through NADRS has been established at New Delhi. The scheme was formally inaugurated in February 2013. Department has made improvements in the scheme based on inputs from the stakeholders. The internet connectivity which was being provided through Virtual Private Network over Broadband (VPNBB) was reported to be slow. It has been decided to convert the VPNBB connections to Broadband internet (BB internet) for smooth transmission of animal disease data. The software for data entry for NADRS was modified for making it more users friendly. Training on the modified software was also conducted by NIC Headquarters for familiarizing the users about the modified version.

3.7.6.3 The data reporting under NADRS is under stabilization phase. As against BE of ₹ 250.00 crore and RE of ₹ 245.45 crore under LH&DC scheme during 2016-17, an amount of ₹ 4.31 crore has been released to BSNL for internet connectivity for implementation of NADRS component.

3.7.7 Peste des Petits Ruminants Control Programme (PPR-CP)

3.7.7.1 The Peste des Petits Ruminants (PPR) is a viral disease characterized by high fever,

inflammation of the gastro-intestinal tract leading to necrosis and ulceration of the mucous membrane and diarrhea. The PPR infection causes huge losses in the rural economy, both in terms of morbidity and mortality in sheep and goats. The PPR Control Programme involving intensive vaccination of susceptible animals has been started in 2010 on 100% central assistance basis. The programme involves vaccinating all susceptible goats & sheep and three subsequent generations. Under first phase, States of Kerala, Tamil Nadu, Karnataka, Andhra Pradesh, Maharashtra, Goa and UTs of Lakshadweep, Daman & Diu, Dadra & Nagar Haveli, Andaman & Nicobar Islands and Pondicherry were covered. In the second phase, the programme has been implemented in all States during 2014-15. It is expected that by the end of 12th Plan, the disease is expected to be brought under control.

3.7.7.2 As against BE of ₹ 250.00 crore and RE of ₹ 245.45 crore under LH&DC scheme during 2016-17, an amount of ₹ 4.70 crore was released to States/UTs till 31st December, 2016 for implementation under PPR-CP component. About 15.34 million vaccinations have been carried out till December, 2016.

3.7.8 Brucellosis Control Programme (Brucellosis - CP)

3.7.8.1 Brucellosis, an economically important zoonotic disease has become endemic in most parts of the country. It causes abortions and infertility in animals. Prevention of abortions will add new calves to the animal population leading to enhanced milk production. This new component has started in 2010 and central assistance is provided to States/UTs for mass vaccination of all female calves of age between 6-8 months in the areas, where incidence of the disease is high.

3.7.8.2 As against BE of ₹ 250.00 crore and RE of ₹ 245.45 crore under LH&DC scheme during 2016-17, a sum of ₹ 2.11 crore has been released to States/UTs till 31st December, 2016

for implementation under B-CP component. About 0.70 lakh vaccinations of eligible female calves have been carried out.

3.7.9 Establishment and Strengthening of Existing Veterinary Hospitals and Dispensaries (ESVHD)

3.7.9.1 In order to assist the states to set up infrastructure for new veterinary hospitals and dispensaries and to strengthen/equip the existing ones, the Department is providing funds on 60:40 (Centre: State) sharing basis except NE and Himalayan States, where the grants are provided on 90:10 basis.

3.7.9.2 As against BE of ₹ 250.00 crore and RE of ₹ 245.45 crore under LH&DC scheme during 2016-17, a sum of ₹ 2.418 crore has been released to States/UTs for implementation of ESVHD component for the construction of 13 veterinary hospitals and renovation of 121 veterinary dispensaries till 31st December, 2016.

3.7.10 Classical Swine Fever Control Programme (CSF-CP)

3.7.10.1 In order to control the CSF disease in pigs, a new component namely, 'Classical Swine Fever Control Programme (CSF-CP)' has been added in the existing scheme of LH&DC during 2014-15. Funds on 90% central share basis are provided to the States for carrying out the vaccination of entire eligible pig population in a phased manner starting in NE states. Depending on the vaccine availability, the scope will be enlarged to cover entire country subsequently. As against BE of ₹ 250.00 crore and RE of ₹ 245.45 crore

Under Livestock Health and Disease Control (LH&DC) Schemes, having 09 components as above, against BE of ₹250 Crores and RE of ₹245.45 Crores, a sum of ₹213.25 Crores has already been released to States/UTs.

A total of 517.84 million vaccinations have been done during 2015-16 (till 31st December, 2016) under different components of Livestock Health and Disease Control (LH&DC) Schemes.

under LH&DC scheme during 2016-17, the funds of ₹ 0.57 crore have been released to four North Eastern States for implementation of CSF-CP component. A total of 66,705 doses of vaccination has been done up to December 2016.

3.8 National Action Plan- Livestock Health

3.8.1 The Department has prepared a detailed National Action Plan in order to prevent the outbreaks of several contagious and zoonotic diseases, their containment and prevent spread of these diseases. If these diseases are not prevented / contained and their spread, farmers income from Animal Husbandry will affect adversely. Therefore, for effective monitoring and implementation of these schemes by states, a detailed National Action Plan has been prepared and enclosed at Annexure- XIV-C.

3.9 Avian Influenza: Preparedness, Control and Containment

3.9.1 Since 2006, the country has been reporting H5N1 Avian Influenza virus, it is first time that country has reported a new virus H5N8 in migratory birds and poultry as well, in States of Delhi, Madhya Pradesh, Kerala, Karnataka, Punjab and Haryana. The Government carried

out the control and containment operations immediately and contained the disease. The situation was reviewed closely and all necessary guidelines were issued to states for timely action. The guidelines were further devised for Zoological Parks and were issued to them for necessary action.

First time, a new Avian Influenza virus H5N8 has been reported in migratory / wild birds and poultry as well in states of Delhi, Madhya Pradesh, Kerala, Karnataka, Haryana and Punjab. New guidelines have been devised for Zoological Parks.

3.9.2 Department has evolved an Action Plan for Prevention, Control & Containment of Avian Influenza (AI), known as Bird Flu. States/UTs are provided financial assistance under ASCAD for above activities. Department has recently issued a revised surveillance plan for robust efforts in prevention of Avian Influenza in the country. Last outbreak of Avian Influenza was reported from village Keranga in Odisha state on 26.12.2016 where control and containment operation is going on.

Details of Avian Influenza outbreaks since Feb. 2006 till 26th December, 2016 are given as under:

Table 3.4: Outbreaks of Avian Influenza upto 26th December, 2016

Episode	Period	State Affected	Number of Epicenters	No. of birds culled (in lakhs)	Compensation paid (in ₹ in lakh)
1st	Feb – Apr, 2006	Maharashtra	28	9.4	270.00
	Feb, 2006	Gujarat	1	0.92	32.00
2nd	Mar, 2006	Madhya Pradesh	1	0.09	3.00
3rd	July, 2007	Manipur	1	3.39	94.00
4th	Jan – May, 2008	West Bengal (1st episode)	68	42.62	1229.00
5th	Apr, 2008	Tripura	3	1.93	71.00
6th	Nov – Dec, 2008	Assam	18	5.09	170.00
7th	Dec, 2008 – May, 2009	West Bengal (2nd episode)	11	2.01	36.00
8th	Jan, 2009	Sikkim	1	0.04	3.00

9th	Jan, 2010	West Bengal (3rd episode)	12	1.56	68.80
10th	Feb –Mar, 2011	Tripura	2	0.21	2.40
11th	8th September, 2011	Assam	1	0.15	6.52
12th	19th September, 2011	West Bengal	2	0.49	19.29
13th	11th January, 2012	Odisha	1	0.32	24.71
14th	13th January, 2012	Meghalaya	1	0.07	7.89
15th	17th January, 2012	Odisha	1	0.11	5.87
16th	28th January, 2012	Tripura	1	0.06	1.20
17th	4th February, 2012	Odisha	1	0.38	2.86
18th	15th March, 2012	Tripura	1	0.05	0.09
19th	28th April, 2012	Tripura	1	0.02	0.72
20th	25th October, 2012	Karnataka	1	0.33	Nil
21st	8th March, 2013	Bihar	1	0.06	2.06
22nd	5th August, 2013	Chhattisgarh	2	0.31	Nil
23rd	November-December, 2014	Kerala	6	2.77	379.51
24th	18th December, 2014	Chandigarh	1	.00110	0.00
25th	25th January, 2015	Kerala	1	0.08	2.16
26th	13th march, 2015	Uttar Pradesh	1	.00844	-
27th	13th April, 2015	Telangana	1	1.60	176.80
28th	18th April, 2015	Manipur	1	0.21	13.89
29th	16th January, 2016	Tripura	1	0.08	
30 th	9 th May, 2016	Karnataka	1	1.21	**
31 th	17 th October, 2016	Delhi*	1	-	-
32 th	21 st October, 2016	Madhya Pradesh*	1	-	-
33rd	24th October, 2016	Kerala**	25	7.45345	-
34th	25th October, 2016	Punjab**	1	0.00033	-
35th	3rd November, 2016	Haryana**	1	0.00944	-
36th	10th November, 2016	Karnataka**	1	0.00693	-
37th	26th December, 2016	Odisha***	1	-	-
Total	204	83.03969	2623.04		

*Un-domesticated birds

** POSP is going on

*** Reported on 26.12.2016 only. Control and containment operation is going on

3.9.3 The following measures have been taken up by the Government of India for control and containment of current Avian Influenza outbreak as well as to prevent its ingress into the country.

- (i) 'The Surveillance Plan on Avian Influenza in the country' has been prepared in November, 2013 and circulated to the State/UT Governments/ Regional laboratories etc. for implementation.
- (ii) The Action Plan on "Preparedness, Control and Containment of Avian Influenza" was revised in 2015 and circulated to the State/UT Governments for implementation. New guidelines have been devised for Zoological Parks.
- (iii) Culling of entire poultry population in the affected zone of 0-1 Km is being carried out.
- (iv) Continuous strengthening of preparedness to tackle any future eventuality in terms of up gradation of laboratories, training of manpower, stockpiling of materials for control and containment etc.
- (v) Training veterinary personnel in preparedness control and containment is continuing. About 90% veterinary work force in the country has been trained to handle control and containment operations. Besides, 44395 number of community workers have been trained on reporting of Avian Influenza expeditiously.
- (vi) To strengthen the diagnosis of Avian Influenza, four pre-fabricated Bio-Safety Level 3 (BSL 3) laboratories have been established at Jalandhar, Kolkata, Bangalore & Bareilly. The laboratories are already functional. A mobile BSL-III laboratory has also been provided to NERDDL, Guwahati which is functional too. 23 State Disease Diagnostic

Laboratories are being upgraded to BSL 2 level, out of which eighteen laboratories are already functional. The remaining are at various stages of completion.

- (vii) Reserve of essential material for control operations have been developed and are being expanded further.
- (viii) Sensitization of general public on Avian Influenza through Information, Education and Communication (IEC) campaigns.
- (ix) Transparent approach towards reporting not only outbreaks but also information of unusual sickness/mortality in poultry and results of laboratory diagnosis.
- (x) All the state governments are alerted from time to time to be vigilant about the outbreak of the disease, if any.
- (xi) Imports of poultry and poultry products have been banned completely from HPAI positive countries.
- (xii) Border check posts with neighboring countries have been alerted.
- (xiii) Advisories are issued to the states for further guidance of poultry farmers from time to time on various aspects of disease control, surveillance and importance of bio security.

3.10 Animal Husbandry Statistics

3.10.1 The production of major livestock products (MLP), namely, milk, eggs, meat & wool are estimated on the basis of sample survey conducted under the Central Sector Scheme "Integrated Sample Survey (ISS)". All the States and Union Territories are implementing the Scheme with Central Assistance to the tune of 50%, 90% and 100% to the States, NE States and UTs respectively for the expenditure on salary for the entitled posts. 100% Central Assistance is also provided for (i) TA/DA to the Enumerator and Supervisor for the conduct of the survey at a prescribed rate; (ii) Information Technology

(IT) solutions; and (iii) refresher training on ISS methodology.

3.10.2 The sample survey is conducted from March to February. The “Technical Committee on Direction for Improvement of Animal Husbandry Statistics (TCD)” guides the Department in implementation of the ISS scheme. Directors of Animal Husbandry/Sheep Husbandry of all the States/UTs, Directors of Directorate of Economics & Statistics (DE&S) of 4 selected States, representatives of CSO & NSSO, Ministry of Statistics & Programme Implementation, representative of Directorate of Economics & Statistics (DE&S), Ministry of Agriculture, representative from Ministry of Rural Development and representatives from other independent agencies such as National Dairy Development Board (NDDB), Anand, NDRI, IASRI and Indian Statistical Institute are the members of the Committee. Director General, Central Statistics Office, Ministry of Statistics & Programme Implementation is the Chairman of the Committee. States/UTs compile season-wise as well as annual estimates of MLP which are discussed and finalized in the meeting of the TCD. The last TCD was held on 16th & 17th June, 2016 at Tirupati, Andhra Pradesh under the chairmanship of Dr. G. C. Manna, Director General, Central Statistics Office, Ministry of Statistics & Programme Implementation. The estimates are

accordingly published in Annual Publication “Basic Animal Husbandry and Fishery Statistics (BAH&FS)-2016” of the Department.

3.11 Livestock Census

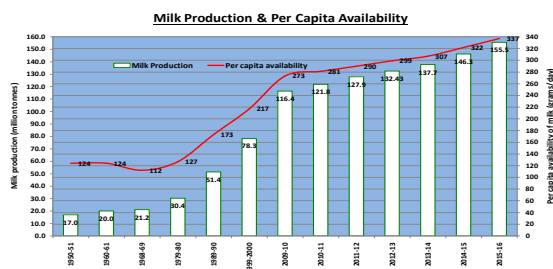
3.11.1 The first Livestock census was conducted during 1919-1920 and since then it is being conducted quinquennially by all States/UTs in India. It is the only source, which gives disaggregated information on various species of farm animals and poultry birds. The 19th Livestock Census was conducted in 2012 in the country in participation with Animal Husbandry Departments of the States/UTs. The reports of the 19th Livestock Census are published and uploaded in the website of the Department. Breed Survey was also undertaken in the year 2013 in order to estimate the breed-wise number of livestock population on a general principle of 15% sample village across the country. The report of the breed survey has been published and uploaded in the website of the Department. Further, the preparatory works of 20th livestock Census-2017 have been initiated. A Technical Committee was constituted to suggest the method of implementation of the census. The Technical Committee has finalized Instruction Manual and Schedule of enquiry for data collection. An all India training of Nodal Officers for 20th Livestock Census-2017 was organized at Vigyan Bhawan from 19th to 21st December, 2016.

Chapter 4

DAIRY DEVELOPMENT

DAIRY DEVELOPMENT

4.1 The Dairy sector in India has grown substantially over the years. As a result of prudent policy intervention, India ranks first among the world's milk producing nations, achieving an annual output of 155.49 million tonnes during the year 2015-16 as compared to 146.31 million tonnes during 2014-15 recording a growth rate of 6.27 %. FAO reported 1.8% increase in world milk production from 789 million tonnes in 2014 to 803 million tonnes in 2015. This represents a sustained growth in the availability of milk and milk products for growing population.

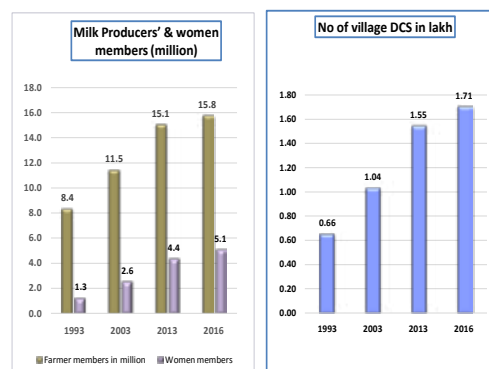


4.2 Dairying has become an important secondary source of income for millions of rural families and has assumed the most important role in providing employment and income generating opportunities particularly for women and marginal farmers. The per capita availability of milk has reached a level of 337 grams per day during the year 2015-16, which is more than the world average of 299 grams per day in 2015. Most of the milk in the Country is produced by small, marginal farmers and landless laborers. 198 dairy cooperative milk unions have covered about 15.83 million farmers under the ambit of 1,70,992 village level dairy cooperative societies up to March 2016. The Cooperative Milk Unions

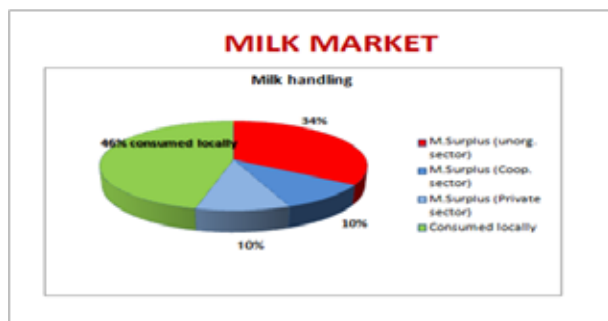
have procured an average of 42.55 million kgs per day of milk during the year 2015-16 as compared to 38 million kgs per day in the previous year recording a growth of 12%. The sale of liquid milk by the Cooperative Dairies has reached 32 million liters per day during the year 2015-16 as compared to 31.24 million liters per day registering a growth of 2.7% over the previous year.



Dairying in India : Cooperatives



Source: NDDB annual Report



4.2.1 Celebration of National Milk Day 2016: Department of Animal Husbandry Dairying and Fisheries for the first time organized National Milk Day on 26th of November, 2016 at A.P. Shinde Symposium Hall, ICAR NASC Complex, Pusa, New Delhi. Shri Radha Mohan Singh, Hon'ble Union Minister for Agriculture and Farmers Welfare and Shri Sudarshan Bhagat, Hon'ble Minister of State for Agriculture and Farmers Welfare inaugurated the function. More than three hundred participants attended the function, comprising of VIPs, Senior Officials of Government of India and State Governments.

4.3 The efforts of the Department in the dairy sector are concentrated on promotion of dairy activities including non-operation flood areas with emphasis on building up cooperative infrastructure, revitalization of sick dairy cooperative milk unions and creation of infrastructure in the States for production of quality milk and milk products. The National Dairy Development Board (NDDB) continues its activities for overall development of Dairy Sector in Operation Flood areas. The brief details of Dairy Development Schemes being implemented by this Department are as follows:

4.4 National Programme for Bovine Breeding and Dairy Development (NPBB&DD)

4.4.1 A restructured scheme titled "National Programme for Bovine Breeding and Dairy Development" (NPBB&DD) was launched in Feb-2014 with budgetary provision of ₹ 1800 crores for implementation during 12th Plan,

by merging of four ongoing schemes namely Integrated Dairy Development Programme (IDDP), Strengthening Infrastructure for Quality & Clean Milk Production (SIQ-CMP), Assistance to Cooperatives (A to C) and National Project for Cattle & Buffalo Breeding (NPCBB). NPBB&DD have two components (a) National Programme for Bovine Breeding (NPBB) and (b) National Programme for Dairy Development (NPDD).

4.4.2 Objective of NPBB&DD

4.4.2.1 The NPBB focuses on extension of field AI Net work through "MAITRI (Multi Purpose AI Technician in Rural India) and to encourage conservation and development of recognized indigenous breeds of the country. The NPDD focuses on creating/strengthening of infrastructure for Production of quality milk, Procurement, Processing and Marketing of Milk & Milk Products by the State Implementing Agency (SIA) i.e. State Cooperative Dairy Federations/ District Cooperative Milk Producers' Union.



4.4.3 Funding Pattern under NPDD

4.4.3.1 50% Grants-in-aid to NDP States, for non NDP States 75% grants to profit making milk unions with accumulated profit of more than ₹ 1 crore in previous Year, 90% grants to loss making milk unions with accumulated profit of less than ₹ 1 crore in previous year, 90% grants to Hilly & North-Eastern States and 50% grants for rehabilitation of sick milk unions. The central assistance is restricted to ₹15 crore

per project and ₹5 crore for rehabilitation of the milk unions.

4.4.4 Achievements under NPDD

4.4.4.1. 31 projects in 17 states have been approved with the total cost of ₹340.77 crore upto 2016-17. A total sum of ₹142.19 crore has been released for implementation of new projects approved under the scheme upto 31.12.2016. Against the budget provision of ₹110 crore, an amount of ₹67.81 crore has been released for implementation of the scheme during 2016-17(upto 31.12.2016).

4.4.5 Intensive Dairy Development Programme (IDDP)

4.4.5.1 The scheme 'Integrated Dairy Development Programme (IDDP) in Non-Operation Flood, Hilly and Backward Areas' was started in 1993-94 with 100% grants-in-aid basis. The scheme was modified in March, 2005 and renamed as 'Intensive Dairy Development Programme (IDDP)'. The scheme has been subsumed under the scheme titled "National Programme for Bovine Breeding and Dairy Development" launched in Feb., 2014.

4.4.5.2 Since inception of the scheme, 114 projects have been approved. Out of these, 60 projects are under implementation and 54 projects have been completed. 264 districts have been covered in 27 States and a UT with a total cost of ₹716.40 crore upto 31.12.2014, including four projects for 'Special Livestock Sector and Fisheries Package for the Suicide Prone Districts in the States of Andhra Pradesh, Maharashtra, Karnataka and Kerala'.

4.4.5.3 A total sum of ₹641.75 crore has been released to the concerned State Govt and Milk Union/State Milk Federations for implementation of approved projects up to 21.12.2016. These projects have benefited about 35.46 lakh farmer members/milk producers in 44944 Villages level DCS in various States procuring over 44.71 lakh kgs of milk per day and marketing milk of about 31.86 lakh litres

per day. Milk chilling capacity of 37.14 lakh litres per day and milk processing capacity of 51.67 lakh litres per day has been created under this scheme upto 21.12.2016.



4.4.6 Assistance to Cooperatives

4.4.6.1 The Central Sector Scheme 'Assistance to Cooperatives' was launched in January 2000 with the objective to revitalize the sick dairy cooperatives having accumulated cash losses. It provides grant in aid to such cooperative Milk Unions on 50:50 sharing basis between Central and the State Government. The rehabilitation plans were prepared with the objective to make net worth of the cooperative become positive within a period of seven years. The scheme has now been subsumed under the scheme "National Programme for Bovine Breeding and Dairy Development" launched in February 2014.



4.4.6.2 The rehabilitation plans for 42 Milk Unions have been approved under the scheme at a total cost of ₹289.64 crore, with 50 per cent central share of ₹144.81 crore. Rehabilitation assistance of ₹ 127.66 crore as central share

had been released to the Milk Unions through NDDDB up to October 2014. Subsequently, the releases after November 2014 are being routed through the concerned State Governments and State Dairy Federations. As on March 2015, the rehabilitation period of seven years was over with respect to 33 Milk Unions. Out of these, 16 Milk Unions have achieved positive net worth while 6 Milk Unions are earning profits but have not yet achieved positive net worth. Eleven Milk Unions continue to incur losses and have negative net worth. Of the remaining 9 Milk Unions, 3 are likely to achieve positive net worth before completion of the rehabilitation period.

4.4.7 Strengthening Infrastructure for Quality & Clean Milk Production

4.4.7.1 In order to improve the quality of milk & milk products in Domestic market and to increase the export of milk products in the International market, the Department had started a Centrally Sponsored scheme namely Strengthening Infrastructure for Quality & Clean Milk Production in October, 2003. The scheme has been subsumed under the new scheme titled “National Programme for Bovine Breeding and Dairy Development” launched in Feb.,2014 .



4.4.7.2 Since inception, the Department has approved 176 projects spread over 22 States and one UT at a total cost of ₹345.01 crore with a Central share of ₹288.36 crore till 31.12.2016, out of total 176 projects, 133 projects have been completed and remaining 43 projects

are at various stages of implementation. An amount of ₹256.28 crore has been released for implementation of approved projects till 31st December,2016. About 8.348 lakh farmer members/milk producers have been trained, 2551 Bulk Milk Coolers(BMCs) with a total milk chilling capacity of 54 lakh litres installed and 1924 existing laboratories have been strengthened.

4.5 Dairy Entrepreneurship Development Scheme

4.5.1 Dairy Entrepreneurship Development Scheme (DEDS) was started in September, 2010 with the objective to generate self employment opportunities in dairy sector in the country. This scheme is being implemented through NABARD which provides financial assistance to commercially bankable projects with loans from Commercial, Cooperative, Urban and Rural banks with a back ended capital subsidy of 25% of the project cost to the beneficiaries of general category and 33.33% of the project cost to SC & ST beneficiaries. The scheme was approved for continuation with certain modifications and the budget provision of ₹1,400 crore during 12th Plan. An entire allocation of ₹240 crore, has been released to NABARD during current year 2016-17(upto 31st December, 2016).



4.5.2 Activities covered- Establishment of small dairy unit from 2 to 10 milch animals, Rearing of heifers (upto 20 calves), Vermi-Compost, Purchase of Milking Machines, Milko

testers & BMCs (upto 5000 litres capacity), Purchase of Milk Processing equipments for manufacture of indigenous milk products, Transportation & Cold Storage facilities, Establishment of private veterinary clinics, Setting up of Milk Parlour for enhancement of milk production, Procurement, Cold chain and Transportation facilities, Processing and Marketing of milk & milk products.

4.5.3 Eligible Beneficiaries – An individual entrepreneur, farmer, Group of farmers, Self Help Groups, Dairy Cooperative Societies, District Milk Unions and Panchayati Raj Institutions are eligible under the scheme.

4.5.4 Since inception, NABARD has disbursed ₹1021.78 crore as back ended capital subsidy to the beneficiaries for setting up of 2,63,164 dairy units upto 31st December, 2016.

4.6 National Dairy Plan

4.6.1 National Dairy Plan Phase I (NDP I) is a scientifically planned multi-state initiative to increase productivity of milch animals and thereby increase milk production to meet the rapidly growing demand for milk through scientific breeding and feeding and to provide rural milk producers with greater access to the organised milk processing sector.

4.6.2 NDP I is a central sector scheme of Government of India being implemented by National Dairy Development Board (NDDB) through the network of End Implementing Agencies (EIAs) for the period 2011-12 to 2018-19 with the following Project Development Objectives:

- Increase productivity of milch animals and thereby increase milk production to meet the rapidly growing demand for milk.
- Provide rural milk producers with greater access to the organized milk-processing sector.

4.6.3 These objectives are being pursued through

adoption of focused scientific and systematic processes in the provision of technical inputs supported by appropriate policy and regulatory measures.



4.6.4 NDP I is being implemented in 18 major milk producing States, viz. Andhra Pradesh, Bihar, Chhattisgarh, Gujarat, Haryana, Jharkhand, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Odisha, Punjab, Rajasthan, Tamil Nadu, Telangana, Uttar Pradesh, Uttarakhand and West Bengal. These States account for more than 90 per cent of the country's milk production. However, the benefits from the project are accruing across the country.

4.6.5 NDP I is being implemented in States where the respective state governments have committed to undertake the necessary policy/regulatory support to prepare an environment for successful implementation of the scheme. All the 18 participating States under NDP I have complied and committed to comply with the key policy and regulatory measures envisaged under NDP I.

4.6.6 NDP I is an externally aided project with the total outlay of ₹2242 crore comprising ₹1584 crore as International Development Association assistance, ₹176 crore as Government of India share, ₹282 crore as share of EIAs that will carry out the projects in participating States and support of ₹200 crore by National Dairy Development Board and its subsidiaries for providing technical and implementation support to the project. Component wise breakup

of the total outlay of NDP I is mentioned in the table below:

Component	Activity	Outlay (₹ in Crore)
Component A	Breed Improvement	737
	Animal Nutrition	425
Component B	Village Based Milk Procurement System	748
Component C	Project Management and Learning	132
Sub Total*		2042

*Source of Funds: World Bank- IDA: ₹1584 Crore; GoI: ₹176 Crore; EIA: ₹282 Crore.

In addition, NDDB would contribute ₹ 200 crore towards technical and implementation support.

4.6.7 Pattern of funding under the scheme is 100 per cent grant-in-aid for nutrition and breeding activities and in the case of village milk procurement systems, 50 per cent of the cost of capital items is being contributed by the End Implementing Agencies.

4.6.8 NDP I consists of a multi-pronged series of initiatives and the key envisaged outputs under the programme are mentioned in the table below:-

Activity	Key Outputs
Production of High Genetic Merit (HGM) cattle and buffalo bulls	• Production of 2,500 HGM bulls
Strengthening of "A" and "B" graded Semen Stations	• Import of 400 exotic bulls/equivalent embryos
Pilot Model for Viable Doorstep AI delivery Services	• Production of 100 million semen doses annually in the terminal year
Ration Balancing Programme	• 3000 MAITs carrying out annual 4 million doorstep AIs by the terminal year
Fodder Development Programme	Coverage of 2.7 million milch animals in 40,000 villages
Strengthening and Expanding Milk Procurement System at Village level	• Production of 7,500 tonnes of certified/truthfully labeled fodder seed
Project Management & Learning	• 1350 silage making/ fodder conservation demonstrations
	• 23,800 additional villages to be covered
	• 1.2 million additional milk producers
	Monitoring, Learning and Evaluation system for collection of data, its analysis and interpretation

4.6.9 Under NDP I, 364 sub projects of 158 EIAs from 18 States have been approved till November 2016, with total approved outlay of ₹1904.22 crore out of which ₹1585.73 crore would be grant assistance from NDP I and ₹318.49 crore would be contribution by End Implementing Agencies for capital items under Village Based Milk Procurement System. The approved sub projects include 23 sub projects on Project Management and Learning activities with the total outlay of ₹ 31.69 crore.



Till 19 December 2016, ₹ 950.79 crore has been received by NDDDB from DADF for implementation of NDP I and ₹ 912.56 crore has been disbursed to EIAs as advance and for expenditure on centralized activities. Total fund utilisation till Sep 2016 has been ₹ 945.25 crore out of which ₹ 780.28 crore is NDP I grant and ₹ 164.97 crore is contribution of EIAs implementing VBMPS sub projects.

4.7 National Action Plan-Dairy Development

4.7.1 Cooperatives & private dairies procure about 20% of the milk produced in the country while 32% is sold in the unorganised market and about 48% is consumed locally. About 40 per cent of the milk sold is handled by the organised sector and the remaining 60 percent by the unorganised sector. However, in most of the developed nations, 90 percent of the surplus milk is processed through organised sector. With the increase in population, rise in per capita income, changing lifestyle, affordable

aspirational food habits, export opportunities etc., the demand for milk is expected to rise. It is estimated that the demand for milk would be in the range of 200 - 210 million MT by 2021-22

4.7.2 Department of Animal Husbandry, Dairying & Fisheries had prepared a Draft National Action Plan for Dairy Development with a target to double the income of dairy farmers through increasing organised milk handling from 20% at present to 50% by 2022-23. The action plan includes creation of milk chilling facilities including bulk milk cooling, processing infrastructure, value addition, organisation of milk collection centres/dairy cooperative societies, milk transportation facility and marketing infrastructure to meet the requirement of increased milk handling. The State-wise targets for each component have been worked out both in physical and financial terms. The National Action Plan for Dairy Development is annexed at Annexure- XIV-D.

4.7.3 National Action Plan- Present Status & Targets:-

Parameters	Status (2015-16)	Target (2023-24)	Gap
Farmer Members (in lakh)	194.16	387.38	178.9
Cooperative Societies /MCC(in lakhs)	3.2	8.3	5.1
Chilling Capacity (LLPD)	766.8	4259.8	3493.0
Processing Capacity (LLPD)	1420.5	4728.8	3308.3
Value Added Products (MTPD)	7918.00	20534.00	12615.9
Milk Drying Capacity (MTPD)	2961.04	8400.7	5439.7

4.8 National Dairy Development Board

4.8.1 Animal Breeding Activities

4.8.1.1 Under NDP-I, it is planned to meet the bull replacement requirement of all “A” and “B” graded semen stations by the end of the project period by producing High Genetic Merit (HGM) bulls through Progeny Testing (PT) and Pedigree Selection (PS) programmes and import of exotic purebred bulls or equivalent embryos. It is estimated that the country would need to produce around 100 million high quality disease free semen doses to breed about 35 per

cent of breedable animals by the end of NDP I and make available about 900 HGM bulls for replacement at all “A” and “B” graded semen stations.

4.8.1.2 The breeds identified for PT include: Holstein Friesian, Holstein Friesian crossbred, Jersey crossbred cattle and Murrah and Mehsana buffalo, and the breeds identified for PS include: Rathi, Kankrej, Tharparkar, Gir, Sahiwal and Haryana cattle and Nili Ravi, Jaffarbadi and Pandharpuri buffalo. Standard Operating Procedures set on scientific principle have to

be strictly followed for these programmes. Adequate bio-security measures also need to be ensured at the village level as well as at the pre-quarantine, quarantine and rearing station level.



4.8.1.3 Thirteen PT and ten PS programmes have been initiated to produce HGM bulls and 22 A and B graded semen stations have been strengthened to produce the required high quality, disease free semen doses. All the PT and PS projects together, since the launch of the NDP-I in 2012-13, have so far supplied 736 (682 PT and 54 PS) young HGM bulls to different semen stations for the production and supply of high quality disease-free semen doses across the country (for the period of April to September 2016, this number was 240 – 222 PT and 18 PS). During April to September 2016, all the 22 semen stations together produced 35.15 million semen doses for AI programmes being implemented by various agencies all over the country.

4.8.1.4 Seventy Six purebred HF bulls imported in 2014 under NDP-I are now under collection at 14 different A and B graded semen stations. These bulls are being closely monitored on monthly and quarterly basis for their growth and health management by our monitoring officers in coordination with the semen stations. The imported bulls are expected to produce on an average 25,000 semen doses per annum. These doses will primarily be used for breeding nondescript cattle to improve their genetic potential in compliance with the state breeding

policies. Another consignment of 100 Jersey bulls is likely to be imported shortly.

4.8.1.5 Four hundred and eighty embryos of pure Holstein Friesian (320) and Jersey (160) breeds were also imported and distributed to four identified Participating Agencies (PAs) that have the required expertise and infrastructure for production of offsprings through embryo transfer.

4.8.1.6 Till September 2016, the projects have transferred 377 exotic HF (250) and Jersey (127) embryos in disease-free recipients. 371 recipients were examined for pregnancy and 131 recipients were confirmed pregnant, signifying a 35.3 per cent conception rate. 20 HF and 17 Jersey calves have been reported to be born till September 2016.

4.8.1.7 Four sub projects are being implemented as part of the initiative to set up a pilot model for doorstep AI delivery services operating in a financially self-sustainable manner using Standard Operating Procedures including animal tagging and performance record. Till September 2016, these pilot sub projects have covered 9121 villages through 1147 Mobile AI technicians and have carried out 1.63 Lakh artificial inseminations during April - September 2016.



4.8.2 Animal Nutrition Activities

4.8.2.1 Under Ration Balancing Programme, Local Resource Person formulates a least cost

balanced ration for milch animals from locally available feed resources using the software “Information Network for Animal Productivity and Health (INAPH)”. Balanced ration to milch animals helps in ensuring that the milch animals produce milk commensurate with their genetic potential. Feeding the balanced ration to milk animals not only reduces the cost of feeding per Kg of milk but also significantly reduces methane emissions. Under this programme, till September 2016, 112 sub projects from 18 States have been approved. Under these approved sub projects, till September 2016, advice on balanced ration has been provided for 19.48 Lakh milch animals in 26223 villages.



4.8.2.2 Under Fodder Development Programme, certified/ truthfully labeled seeds are being promoted to increase fodder production. Field demonstrations of mowers, silage making and biomass storage silos are also being carried out to popularize these technologies amongst farmers.



4.8.2.3 Fifty sub projects on Fodder Development approved under NDP-1 were

implemented under various programmes, as per the approved targets. Till November 2016, End Implementing Agencies produced 6,553 MT improved fodder seeds, sold 15,918 MT seeds, organized 1,411 silage and 1,559 mower demonstrations. Twenty Micro-Training Centres were established by 10 EIAs and 32,674 farmers were exposed to improved fodder cultivation and animal husbandry practices by progressive dairy farmers. 64 biomass bunkers were constructed and EIAs started to procure & store dry fodder during harvesting season for supplying during deficit season. Five fodder seed plants were commissioned at Lucknow, Kota, Vijayawada, Kolar and Bellary milk unions and started processing, storing, packing and marketing quality fodder seeds of improved fodder varieties.

4.8.3 Village Based Milk Procurement System

4.8.3.1 Village Based Milk Procurement System under NDP-1 aims at providing rural milk producers with greater access to organized milk processing sector and improvement of milk quality by forming and strengthening Dairy Cooperative and Producer Companies.



4.8.3.2 To expand coverage and provide greater market access to milk producers, village level infrastructure viz., Electronic Weighing Scale, Data Processor Based Milk Collection Unit, Automated Milk Collection Accessories and Electronic Milk Tester are being provided to ensure a fair and transparent milk collection.

As part of raw milk quality improvement drive 1745 Bulk Milk Coolers have been approved including 43 BMC under producer companies.

4.8.3.3 Total 124 sub projects including 11 supplementary SPPs (119 of Cooperatives and Five of Producer Companies) have been approved till October, 2016 under Village Based Milk Procurement System.

4.8.3.4 Till October 2016, 29320 villages have been covered of which 12850 new DCS/MPP have been formed which includes 4014 women DCS/MPP in which 8.29 lakh additional members are enrolled, including 3.79 lakh women and 5.69 lakh small holders, also 5.33 lakh additional beneficiaries of strengthened DCS villages covered.

4.8.4 Project Management and Learning

4.7.4.1 NDP I project monitoring and evaluation system is in place which is supported by ICT based Management Information System and has facilitated learning and evaluation along with internal and external monitoring, evaluation, quality assurance, special studies etc. Various ICT based MIS applications being used for reporting and analysing the progress made include:

- Enterprise Project Management (EPM)
- Information Network for Animal Productivity & Health (INAPH)
- Procurement MIS (ProcMIS)
- Grievance Redressal System (GRS)
- Fund Utilisation Tracking System (FUC Tracker)



4.8.4.1 NDP I Regional Review Meetings are being organized regularly to review the progress made, identify the bottlenecks/ shortcomings, highlight the success and work out the future action plan etc. These regional review meetings are chaired by Secretary, DADF; Chairman, NDDB; and attend by Mission Director, NDP I; World Bank Team, Secretaries and Directors of State AH Department, MDs of Federations, General Manager CMC-PMU, CEOs and Project Coordinators of concerned EIAs; DADF and NDDB officers. Each Sub Project has been assigned to a monitoring officer of NDDB for concurrent monitoring and providing implementation support to EIAs.



4.8.4.2 While implementing the activities under NDP I, social inclusion and environment mitigation measures are being undertaken with a focus on increasing participation of women, small holders and schedule caste & schedule tribes across the activities.

4.8.4.3 For external Monitoring and Evaluation of NDP I and to assess the impact of activities being implemented under NDP I, external agencies have evaluated the progress of the project. Some of the major highlights of the reports include:

- The share of milk sold to the organized sector (as share of production) in the project area has increased from 45 per cent during the baseline year 2012-13 to 50 per cent during 2015-16.

- Under Methane Emission Measurement Study it has been found that due to balanced feeding of rations, methane emission from enteric fermentation has reduced by more than 12 per cent in lactating cows and buffaloes.
- The RBP impact study undertaken highlighted that due to feeding of balanced ration to animals, there has been reduction in cost of feeding to animals by more than 10 per cent on an average.
- Women Empowerment study has highlighted that direct participation of women as Dairy Cooperative Society (DCS) members has increased to 50 percent in NDP I project area.
- Inclusion of women has substantially increased in the governing bodies and management committees and other leadership positions at the DCS level.

4.9 Consolidation of Cooperative Movement by NDDB

4.9.1 The National Dairy Development Board (NDDB) with headquarters in Anand in Gujarat (India) is a statutory body corporate. NDDB promotes plans and organises programmes for the development of dairy and other agriculture based and allied industries along cooperative lines and also provide assistance in the implementation of such programmes. NDDB was set up in 1965. In 1987, NDDB was declared an institution of national importance and a statutory body by an Act of Parliament.



4.9.2 Strengthening the Cooperatives

4.9.2.1 During FY 2015-16, NDDB launched a new scheme for financial assistance to Dairy Cooperatives/Producer Companies with effect from 1st July 2015 in place of the existing scheme 'Perspective Plan' which was discontinued with effect from 1st July 2015. Under the new scheme, NDDB provides technical and financial support to Dairy cooperatives & Producer companies in the areas of infrastructure activities and skill development, trainings & awareness programmes.

4.9.2.2 Under the Perspective Plan, up to 30 June 2015, NDDB had approved investment plans of 105 dairy cooperatives, with a total outlay of ₹ 2,445.36 crore, of which, NDDB's financial assistance is to the tune of ₹ 1,763.25 crore. Under the new scheme, investment plans of 3 dairy cooperatives/producer companies have been approved up to 31st October 2016 with a total outlay of ₹ 651.36 crore, of which, NDDB's financial assistance is to the tune of ₹ 485.52 crore.



4.9.3 Animal Nutrition & Feed Technology

4.9.3.1 Production and use of area specific mineral mixtures, bypass protein and fat supplement, pregnancy feed and calf starter continued during the year. For production and supply of area specific mineral mixtures, two more mineral mixture plants, each of 12 tonnes per day capacity, were set up at cattle feed plant, Kaladera in Rajasthan and Kanjari under Kaira Milk Union in Gujarat. During the

year, one bypass protein plant of 50 tonnes per day capacity was also set up at cattle feed plant, Himmatnagar under Sabarkantha Milk Union in Gujarat, for production of bypass protein supplement/feed.

4.9.3.2 For improving productivity and productive life, supplementation of area specific mineral mixture in the ration of dairy animals is obligatory. So far, NDDB has completed mineral mapping programme in most of the major dairying states, which are now producing and making area specific mineral mixture available to milk producers. During the year, mineral mapping programme was completed for Chhattisgarh, for developing area specific mineral mixture. Large number of feeds, fodders and hair samples were collected and analysed for various macro and micro-minerals, using Inductively Coupled Plasma-Optical Emission Spectroscopy (ICP-OES). Calcium, phosphorus, magnesium, sulphur, copper, zinc, iodine, chromium and cobalt were found to be deficient in the ration. Based on these results, an area specific mineral mixture formulation was developed for the state.

4.9.3.3 NDDB undertook a field study to demonstrate the scientific feeding practices to raise the healthy female indigenous cow and buffalo calves in villages of Anand and Kheda district of Gujarat state. Fifty four female calves (37 Gir +17 Kankrej) were born out of 101 pregnant animals selected for the trial. Average body weight of Gir cow calves were higher (172 v/s 122 kg) after feeding the calf starter and growth meal for twelve months. Gir calves attained 76 per cent of their mature body weight at the age of one year. Similar trend was observed in seventy female Mehsani buffalo calves. Buffalo calves fed calf starter and calf growth meal showed sign of first heat at the age of eighteen months and three got pregnant at twenty months of age. Feeding trial for raising 1,000 female Kankrej calves in Banaskantha district has been accepted by Banas Union for which technical assistance will be provided by NDDB.

4.9.3.4 A minimum Reichert Meissl (RM) value in butter fat is the statutory requirement of Food and Safety Standards Authority of India (FSSAI Rules, 2011). RM value is used for the detection of vegetable fats in butter fat/ghee. Butter fat contains high proportions of volatile fatty acids, whereas, vegetable and other animal origin fats contain very little or no volatile fatty acids. Low RM value could be indicative for adulteration of butter fat with vegetable fats. Bypass fat is used to supplement the ration of lactating animals to increase energy density of the ration. There is perception among few agencies that on feeding bypass fat, Reichert Meissl (RM) value of butter fat/ghee is reduced. In view of this, a trial was undertaken on 20 crossbred cows to study the effect of supplementing bypass fat on RM value of butter fat/ghee. On feeding bypass fat supplement, RM values of butter fat was 26.13 ± 0.17 and 26.73 ± 0.24 , in control and bypass fat supplemented groups, respectively. There was no significant difference in RM value of butter fat in both the groups. Butyric acid contributes about three-fourths and caproic acid one-fourth to the RM value. Results of fatty acid analysis of butter fat showed non-significant change in concentration of butyric acid and caproic acid, which further validated that feeding bypass fat had no adverse effect on RM value of butter fat/ghee. Milk yield and FCM yield increased by 7.15 per cent and 12.33 per cent, respectively in bypass fat supplemented group over the control group.



4.9.3.5 Carbon footprint of milk is a measure of the impact human activities have on

environment in terms of amount of greenhouse gases (GHG) produced, measured in unit of carbon dioxide equivalent (CO₂-eq.) per unit of fat and protein corrected milk (FPCM). NDDB conducted a cradle-to-grave life cycle assessment study using regional data for estimating carbon footprint of milk in India. Study indicates that Indian dairy sector emitted 469.2 million tonnes CO₂ eq. net emissions for the year 2014. Emissions of carbon dioxide, methane and nitrous oxide contributed 5.1, 83.9 and 11.0 per cent, respectively, to the total GHG emissions by the dairy sector. Methane from enteric fermentation was the major hotspot (71.6 percent), followed by GHG emissions from feed production (10.1 per cent). The post-farm gate emissions contributed only 1.5 per cent to the total GHG emissions. The average carbon footprint of cow and buffalo milk in India is 4.0 and 2.4 kg CO₂-eq/kg FPCM, lower by 27 and 25 per cent, respectively, than the values reported by Food and Agriculture Organization of the United Nations for South Asia. Low carbon footprint of milk in India is mainly due to the fact that animals' ration does not contain significant quantity of grains and green fodder. In addition, energy used for processing of feed ingredients, fodder production, harvesting, fodder distribution to animals, dung collection, milking etc. is non-significant.

4.9.3.6 The network of providing balanced ration advisory services at farmers' doorstep with the help of local resource persons (LRPs) continued. More projects on ration balancing programme (RBP) under National Dairy Plan-I (NDP-I) covering major dairying states were taken up. From April to September 2016, 15 new RBP projects were approved, thus, making a total of 112 sub projects in 104 end implementing agencies (EIAs), covering 18 states. During this period, field implementation initiated in 15 more EIAs, bringing 95 organizations under the fold of RBP across the country. In first six months of 2016-17, 4.24 lakh animals of 3.15 lakh farmers in 4,388 villages were added to the programme.

Overall, 14.7 lakh milk producers provided balanced ration advisory services for 19.48 lakh animals in 26,223 villages, till September 2016. For programme implementation, monitoring and training of village level functionaries, 81 technical personnel from 54 cooperative milk unions and producer companies were imparted RBP training. Eighteen veterinary officers from Animal Husbandry Department, Andhra Pradesh were also trained on RBP at NDDB, Bangalore.

4.9.3.7 Online INAPH data indicates that balanced ration led to an increase in average daily milk yield of 0.26 kg and milk fat by 0.10 per cent. Cost of feeding was reduced by ₹ 2.13 per kg of milk. The average net daily income of milk producers increased by about ₹ 25 per animal.



4.9.3.8 Under Fodder Development Programme, production and sale of certified/truthfully labelled seeds of high yielding improved varieties of fodder crops are being promoted to increase green fodder yield. 12.933 MT of breeder seeds of improved varieties of fodder crops were supplied to milk union for further multiplications through Fodder Seed Processing Units established in different states. Improved fodder development technologies

like use of quality seed of improved fodder varieties for enhancing green fodder yields on farmer's field, utilisation of fallow land for fodder production, green fodder preservation through silage making, field demonstrations of mowers for collection of biomass/field crop wastes and their storage in biomass bunkers were popularised among farmers. Thornless cactus and Moringa, new fodder crops were also popularised in rural areas through demonstrations. Moringa cultivation on 48 acres at farmer's field was organised. Six farmers each with 200 square meters have been covered under thornless cactus in Dahod and Banaskantha districts for trial cum demonstration programme.

4.9.4 Animal Breeding

4.9.4.1 The key goals set for achieving a steady

NDP Projects

genetic progress in the cattle and buffalo population under NDP include: raising the percentage of breedable animals inseminated from the current level of about 28 per cent to 35 per cent by the end of NDP I and 50 per cent by the end of NDP II; increasing the production of high quality disease free semen doses from the current level of 66.8 million to 100 million by the end of NDP I, and making available about 900 bulls annually by the end of NDP I for semen production, the majority of them produced through progeny testing and pedigree selection programmes and a small number through import of exotic purebred bulls or equivalent embryos so as to meet 100 per cent bull replacement requirement of all semen stations in the country.

4.9.4.2 The following Animal Breeding projects have been approved under NDP-I:

1. Semen Station Strengthening (SSS) Projects:

Sr. No.	State	Activity	EIA Name
1.	Gujarat	SSS- SAG, Bidaj	Sabarmati Ashram Gaushala
2.	Uttar Pradesh	SSS- ABC, Salon	Animal Breeding Research Organisation
3.	Tamil Nadu	SSS- DLF, Ooty	Tamil Nadu Livestock Development Agency
4.	Karnataka	SSS- Nandini Sperm Station	Karnataka Milk Federation
5.	Punjab	SSS- Nabha	Punjab Livestock Development Board
6.	Andhra Pradesh	SSS- Banavasi	Andhra Pradesh Livestock Development Agency
7.	Gujarat	SSS- Jagudan	Mehsana Milk Union
8.	West Bengal	SSS- Haringhata	Paschim Banga Go- Sampad Bikash Sanstha
9.	Karnataka	SSS- CFSP&TI, Hessarghata, Bengaluru	Central Frozen Semen Production & Training Institute
10.	West Bengal	SSS- Salboni	Paschim Banga Go- Sampad Bikash Sanstha
11.	Telangana	SSS- Karimnagar	Telangana State Livestock Development Agency
12.	Uttarakhand	SSS- Rishikesh	Uttarakhand Livestock Development Board
13.	Kerala	SSS- Mattupatty	Kerala Livestock Development Board
14.	Kerala	SSS- Dhoni	Kerala Livestock Development Board

15.	Madhya Pradesh	SSS- Bhadbhada	MP State Livestock and Poultry Development Corporation
16.	Gujarat	SSS- ARDA	Amul Research and Development Association, Anand
17.	Maharashtra	SSS- Urulikanchan	BAIF Development Research Foundation
18.	Gujarat	SSS- Patan	Gujarat Livestock Development Board
19.	Rajasthan	SSS- Bassi	Rajasthan Cooperative Dairy Federation
20.	Gujarat	SSS- Dama	Banaskantha Milk Union
21.	Tamil Nadu	SSS- NJF Ooty	Tamil Nadu Cooperative Milk Producers' Federation Limited
22.	Haryana	SSS- Hissar	Haryana Livestock Development Board

2. Progeny Testing (PT) Projects:

Sr. No.	State	Activity	EIA Name
1.	Karnataka	PT- HF Pure	Karnataka Milk Federation
2.	Tamil Nadu	PT - CB Jersey	Tamil Nadu Cooperative Milk Producers' Federation Limited
3.	Gujarat	PT- Murrah	Sabarmati Ashram Gaushala
4.	Gujarat	PT- CB HF	Sabarmati Ashram Gaushala
5.	Gujarat	PT – Mehsana	Banaskantha Milk Union
6.	Gujarat	PT – Mehsana	Mehsana Milk Union
7.	Punjab	PT – Murrah	Punjab Livestock Development Board
8.	Andhra Pradesh	PT - CB Jersey	Andhra Pradesh Livestock Development Agency
9.	Uttar Pradesh	PT – Murrah	Animal Breeding Research Organisation
10.	Haryana	PT- Murrah	Haryana Livestock Development Board
11.	Uttarakhand	PT- CB HF	Uttarakhand Livestock Development Board
12.	Uttar Pradesh	PT- CB HF	BAIF Development Research Foundation
13.	Kerala	PT- CB HF	Kerala Livestock Development Board

3. Progeny Selection (PS) Projects:

Sr. No.	State	Activity	EIA Name
1.	Gujarat	PS- Kankrej	Banaskantha Milk Union
2.	Gujarat	PS- Jaffarabadi	Sabarmati Ashram Gaushala
3.	Gujarat	PS- Gir	Sabarmati Ashram Gaushala
4.	Rajasthan	PS- Rathi	Uttari Rajasthan Cooperative Milk Union Ltd. Trust
5.	Haryana	PS- Hariana	Haryana Livestock Development Board
6.	Maharashtra	PS- Pandharpuri	Maharashtra Livestock Development Board
7.	Punjab	PS- Nili Ravi	Punjab Livestock Development Board

8.	Rajasthan	PS- Tharparkar	Rajasthan Livestock Development Board
9.	Punjab	PS- Sahiwal	Punjab Livestock Development Board
10.	Rajasthan	PS- Sahiwal	Ganganagar Milk Union

4. Import of Bulls/ Embryos/ Bull Production Through Imported Embryo (BPTIE) Projects:

Sr. No.	State	Activity	EIA Name
1.	Gujarat	BPTIE	Sabarmati Ashram Gaushala
2.	Maharashtra	BPTIE	BAIF Development Research Foundation
3.	West Bengal	BPTIE	Paschim Banga Go-Sampad Bikash Sanstha
4.	Gujarat	BPTIE	Sabarmati Ashram Gaushala
5.	Uttarakhand	BPTIE	Uttarakhand Livestock Development Board
6.	Centralised	Import of Bulls	Project Management Unit, NDP I, NDDB

4.9.4.3 In order to make a timely and unbiased allocation of HGM bulls produced by different PT and PS projects under NDP-I and imported bulls to eligible semen stations, DADF has constituted a Bull Distribution Committee. This committee follows various guidelines finalized by NDDB in consultation with the DADF under the overall guidance of the Mission Director, NDP-I. The committee so far has distributed 736 HGM bulls of various breeds to different organizations in the country involved in semen production.

4.9.4.4 There is an estimated requirement of 400 bulls of exotic breeds (200 bulls each of Jersey and Holstein Friesian) by various semen stations in the country. To meet the immediate requirement of 200 bulls of these breeds, NDDB has already imported 76 HF bulls under NDP-I in 2014 and distributed to 14 A and B graded semen stations across the country. NDDB has also imported 480 embryos of Jersey and HF which have been supplied to four Participating Agencies (PAs) namely BAIF, Pune; PBGSBS, Kolkata; SAG, Bidaj and ULDB, Dehradun who by means of Embryo Transfer Technology are taking up bull production.

4.9.4.5 DADF, Government of India has notified formation of a nine member expert committee for Estimation of Breeding Value of Bulls. Estimation of the breeding value of bulls of four

PT projects is carried out. Breeding values for 519 test bulls of four different breeds calculated by Test Day Random Regression method was published.

4.9.4.6 In order to initiate Genomic Selection, NDDB has initiated collection of biological samples from all the animals being milk recorded under PT and PS projects and genotyping of representative animals from different Indian breeds through HD chip and identify SNPs which are useful in our breeds. It is envisaged to develop customized chip for Indian cattle and buffalo populations, then genotype large number of cows, buffaloes and bulls having performance records by custom chip to create reference population, develop Genomic Selection equation based on female reference population and select bulls for semen production based on GEBVs.

4.9.4.7 During April-September 2016, under the Unique Animal Identification System, NDDB has provided more than 50 lakh (provisional) unique numbers to various agencies involved in providing various services to the farmers.

4.9.4.8 NDDB Dairy Services managed semen stations – Sabarmati Ashram Gaushala, Bidaj, Animal Breeding Centre, Salon, Rohtak Semen Station, Haryana and Alamadhi Semen Station,

Chennai – together produced about 142 lakh doses of frozen semen (provisional) during the period from April to September 2016. During the same period, the eight dairy cooperative semen production stations in the country produced another 67 lakh frozen semen doses (provisional).

4.9.4.9 Refresher training of 16 officers of Progeny Testing Projects and various technical trainings of 33 semen station personnel have been organized during this period.

4.9.4.10 NDDB has provided support for implementation of INAPH application in Central Herd Registration Scheme (CHRS) and Central Cattle Breeding Farms (CCBF). INAPH implementation support to states under NPBBDD is being provided on continuous basis.

4.9.5 Animal Health

4.9.5.1 NDDB is continuing to support the field pilot project on brucellosis control in three settings- village, farm and around a semen station. The main components of the project are calf hood vaccination, animal identification, data capturing, sero-monitoring, herd and individual testing to identify positive villages and animals. Proper disposal of aborted material, disinfection of infected premises are also given equal importance in this disease control model. The programme is for a period of five years with a total outlay of ₹169.06 lakh. NDDB is contributing ₹104.95 lakh. Awareness creation of the disease in humans was also given focus over and above the other components during the year so as to provide a more plausible reason for the farmers to willingly participate in controlling the disease in animals. Improved awareness and linkages among medical physicians was also created to improve the diagnosis and cure rates of the disease in humans, thus addressing the issue of productivity of the farmer affected with brucellosis, and, thereby reducing the indirect losses related to the disease. Point of care test using Lateral Flow Assay (LFA) kits were used

in the field to test the farmer when symptoms of brucellosis were suspected.

4.9.5.2 NDDB continued to support the pilot mastitis control programme which has now been extended from 50 to 100 villages in the district of Sabarkantha in Gujarat. Detection and control of sub-clinical mastitis remained at the core of the control programme with new components like ethno-veterinary medicine and dry cow therapy added to reduce antibiotic usage. Field level testing to monitor antibiotic residues has also been included in the extended project. The project will continue till March 2018 with a total outlay of ₹162 lakh. NDDB's contribution would be ₹57 lakh and ₹105 lakh, the Union's share.



4.9.5.3 Research & Development laboratory, Hyderabad established by NDDB is a state-of-art facility for monitoring of sexually transmitted diseases in bovines. The laboratory has been accredited with ISO 9001:2008 and is already implementing ISO 17025:2005 (NABL) quality management system for providing rapid and accurate diagnostic services. The prime activities of the laboratory screening of sexually transmitted diseases in cattle and buffalo as per guidelines of Minimum Standard Protocol (MSP) of DADF as well as to undertake research on the development of improved diagnostic test protocols.

4.9.5.4 The laboratory receives clinical samples for disease diagnosis from various stakeholders' countrywide constituting semen stations,

bull mother farms and villages covered under progeny testing and pedigree selection.

4.9.5.5 During the period under report (1 April 2016 – 31 October 2016), the laboratory received a total of 32427 serum samples from 14 States for screening against various infectious diseases. Testing of 10807 sera for antibodies against infectious bovine rhinotracheitis (IBR) by I-ELISA revealed 23.34 per cent positivity. A total of 13411 serum samples were processed for bovine brucellosis and 366 (2.73 per cent) were recorded positive for brucella antibodies. Serum samples from 7053 cattle and buffaloes aged above 6 months were tested for bovine viral diarrhoea (BVD) antigen ELISA kit and 10 (0.14 per cent) were recorded positive. All the serum samples (n=158) from calves below 6 months of age were turned negative by real-time PCR. Screening of 1156 animals from John's disease (JD) by ELISA resulted in 2.16 per cent positivity.

4.9.5.6 The laboratory has standardized procedure for collection, preservation and dispatch of bovine preputial washing from bulls for diagnosis of bovine genital campylobacteriosis (BGC) and trichomonosis and have trained veterinarians posted at semen stations. The laboratory continued to screen preputial washing for diagnosis of BGC and Trichomonosis by attempting cultural isolation. In the period under report, the laboratory processed 171 preputial washing collected from bulls housed at semen stations for BGC and trichomonosis and none were found positive.

4.9.5.7 The OIE recommends screening of all frozen semen batches (FSB) produced from IBR sero-positive bulls for absence of bovine herpesvirus-1 (BHV-1) before its use in artificial insemination. The laboratory continued to screen FSB produced from IBR sero-positive animals by real-time PCR for detection of BHV-1. During the period under report a total of 17827 semen batches received from six semen stations located at Gujarat, Uttar Pradesh,

Haryana, Madhya Pradesh, Chhattisgarh, Maharashtra and 0.84 per cent of FSB were declared positive for BHV-1. Screening of 508 clinical samples (milk, nasal secretion, genital secretion, lacrimal secretion, blood, aborted material submitted in liquid form or spotted onto FTA® card) from animals of reproductive disorder resulted 4.33 per cent positivity for brucella.

4.9.5.8 The laboratory evaluated use of filter paper as an alternate method of transportation of specimen for diagnosis of brucellosis. Serum samples spotted onto filter paper were evaluated for detection of Brucella antibody by Indirect ELISA. Diagnostic efficiency were compared between the serum samples spotted onto filter paper and transported at ambient temperature with direct serum samples transported under cold chain. The results of filter paper revealed 97.27 per cent sensitivity and 100 per cent specificity respectively in comparison to liquid serum and demonstrated very good agreement between the two methods (Kappa value=0.972).



4.9.5.9 In a study milk, nasal swab, vaginal swab, lacrimal swab collected from cattle with history of abortions were spotted into FTA® elute card and transported to laboratory at ambient temperature for diagnosis of brucellosis by real-time PCR. Comparison of this method with the liquid specimen (transported under cold chain) revealed 75 per cent and 99.62 per cent diagnostic sensitivity and specificity

respectively. The laboratory also evaluated FTA® cards in transportation of extended bovine semen for detection of BHV-1 DNA by real time PCR. The optimized test method was found to be robust and highly repeatable. The results indicated this method to be comparable with OIE recommended chelex method. The diagnostic sensitivity and specificity was found to be 83.08 per cent and 93.23 per cent respectively with Kappa value 0.738 in comparison to OIE method.

4.9.6 Quality Assurance

4.9.6.1 NDDB is continuing with its endeavour to assist the cooperative and producers owned dairy organisations to improve food safety and quality of milk products being offered to consumers. NDDB has taken an initiative to implement concept of “Quality Mark” for the cooperatives and producers owned dairy organisations. The initiative aims at maintaining food safety and quality attributes of milk and milk products being supplied to consumers. Under the initiative, the cooperatives and producers owned dairy organisations have been sensitised on the need of making available good quality and safe milk and milk products to the consumers and the steps required to be undertaken right from milk production till delivery to the consumers. The process involves the pre-assessment of the dairy units followed by a detailed inspection by a panel of subject matter experts. The Quality Mark display on package shall enhance the consumer confidence in the milk and milk products being marketed by the cooperatives and producers owned organisations.

4.9.6.2 NDDB has undertaken a programme wherein samples of milk and milk products from the various regions in the country are being analysed to determine levels of contaminant and residues; as these significantly affects Food Safety and Quality of milk and milk products. In addition, testing programme was undertaken to determine the fat and SNF content in milk to

assess effect on the composition of milk of as a result of change in the demography of the cattle population, due to an increase in the exotic cattle population in the country.

4.9.6.3 Besides providing assistance to the cooperatives and producers owned dairy organisation, the NDDB also works as an interface between the cooperative and producers owned dairy industry and the Food Authority of India (FSSAI), by providing expert opinion to the Authority for framing of domestic food regulations. Technical support to the Government of India was provided in matters related to the harmonisation of domestic food laws with those of CODEX.



4.9.6.4 As a result of continuous efforts by NDDB, cooperatives and producers owned organisations; approx. 11,000 Bulk Milk Coolers with a chilling capacity of 2.4 crore litres of milk per day have been installed in the rural areas which ensures receipt of good quality raw milk free from adulteration at milk processing units. The cooperatives and producers owned dairy organisations have also set up approximately 1,05,000 units for fair, quick and transparent milk quality testing at the village level.

4.9.7 Milk Procurement and Marketing

4.9.7.1 About 15.8 million farmers have been brought under the ambit of 1,70,992 village level dairy cooperative societies up to March 2016. The cooperative milk unions have procured an average of 42.6 million kg of milk

per day during the year 2015-16 as compared to 38.0 million kg in the previous year recording a growth of around 12.1 per cent. The sale of liquid milk by cooperative sector has reached 32.1 million litres per day during the year 2015-16 registering a growth of around 3.0 per cent over the previous year.

4.9.7.2 During April 2016 – October 2016, the average milk procurement by dairy cooperatives was around 409 lakh kg per day (provisional) as compared to around 395 lakh kg per day during the same period last year, registering an increase of around 3.5 per cent. During the same period, the cooperatives marketed an average of around 330 lakh litres of milk per day, registering a rise of around 2.2 per cent over the corresponding period last year.

4.9.8 Milk Producer Companies

4.8.8.1 NDDDB Dairy Services (NDS), the wholly owned subsidiary of NDDDB, facilitated the incorporation and operationalization of four more Milk Producer Companies (MPCs), two in Rajasthan namely Sakhi Mahila Milk Producer Company in Alwar and Asha Mahila Milk Producer Company in Pali, one in UP namely Shwethdhara Mahila Milk Producer Company Limited in Pratapgarh and one in Punjab namely Ruhaanii Milk Producer Company Limited in Mansa. NDS has promoted these MPCs, based on the request from Tata Trusts, in areas where the Trust is already implementing livelihood projects. Out of these four MPCs, three MPCs are 'all women-member' based and all the producer-directors on the Board are women.

4.9.8.2 Ministry of Rural Development, Government of India has recognized NDS as one of the support organization for Deen Dayal Antyodaya Yojana (DAY-NRLM) which has a central objective to bring about increase in the household incomes of the rural poor through sustained livelihood enhancements. NDS would be assisting the State Rural Livelihood Missions (SRLMs) in developing dairy value chain by setting up Milk Producer Companies in their

project districts. Exposure visits for the SRLM officials to the NDS facilitated Milk Producer Companies were organized.

4.9.8.3 NDS continued to support the five Milk Producer Companies namely Paayas in Rajasthan, Maahi in Gujarat, Shreeja in Andhra Pradesh, Baani in Punjab and Saahaj in Uttar Pradesh. NDS has also provided technical support to these MPCs in taking up various activities under NDP-I.

4.9.8.4 Together, these five MPCs have enrolled around 3.51 lakh milk producers as members from about 9845 villages so far, of whom about 39 per cent are women. About 59 per cent of the members enrolled till date are small holder milk producers. These five companies together procured about 17.7 lakh kg of milk per day during the period. The members of these five companies contributed about ₹ 70 crore towards share capital as on date. They are expected to achieve a combined sales turnover of about ₹ 3000 crore during the year 2016-17.

4.9.9 Semen Stations

4.9.9.1 NDS manages the two largest semen stations in the country-Sabarmati Ashram Gaushala in Bidaj (Gujarat), and Animal Breeding Centre in Salon, Rae Bareilly (UP). Additionally, NDS setup two new state-of-the-art semen stations in Alamadhi (Tamil Nadu) and Rahuri (Maharashtra). Each of the new semen station has a capacity to produce about 100 lakh semen doses in a year.

4.9.9.2 The Central Monitoring Unit (CMU) constituted by the Department of Animal Husbandry, Dairying & Fisheries, Government of India for the qualitative evaluation of Semen Stations in the country ranked Animal Breeding Centre, Salon and Alamadhi Semen Station as first and second in the evaluation carried out during 2016.

4.9.9.3 The semen doses produced from all the four semen stations are being marketed under a common brand name "Superior Animal

Genetics” and it is expected to market about 300 lakh doses during 2016-17.

4.10 New Initiatives

4.10.1 NDDB has initiated the process of convergence between dairy co-operative network and technical expertise of scientific beekeeping available with National Bee Board (NBB). Interested milk unions will be supported

in initiating awareness camps for farmers on scientific beekeeping with support from NBB. Banaskantha Milk Union has already initiated the honey project envisaging to train 2000 farmers and to provide at least 20000 honey beekeeping equipment's in its operational area.

4.11 Details of funds allocated and utilized under Dairy Development Schemes

(₹ in Crore)

Sr. No.	Fund Allocation	Fund Utilized
11th plan	582.00	571.82
12th plan (for Year 2012-13)	543.30	522.35
12th plan (for Year 2013-14)	570.00 (BE)/516.14 (RE)	498.88
12th Plan (for year 2014-15)	550.04 (BE)/482.18(RE)	408.56
12th Plan (for year 2015-16)	501(BE)/490.99(RE)	432.02
12th Plan (for year 2016-17)	474(BE)/664.32(RE)	527.81(upto 27.12.2016)

4.12 Creation of Milk Chilling Facility

4.10.1 The Prime Minister's Office is monitoring the creation of Cold Chain infrastructure in Agriculture including Dairy Sector on monthly basis. Based on the information obtained from

various State Governments/ State Cooperative Milk Federation, the milk chilling capacity created under dairy dev. Schemes of this Deptt., RKVY of Do AC and other schemes of States Govt. is as under:

Year	Target(TLPD Per year)	Achievement (TLPD Per Year)
2012-13	1500	1705
2013-14	1750	1844
2014-15	2000	1652
2015-16	2250	2200
2016-17(April to Dec, 2016)	2500	1490

4.13 Milk Situation in the Country

4.13.1 Price Trend

4.13.1.1 The yearly inflation rate of milk (base year 2004-05=100) as on November, 2016 was 4.19% as against 1.58% in the previous year. Major State Milk Federations have increased the procurement and selling price of milk over the last one year and the average increase is about ₹ 1.06 per liter and ₹ 1.07 per liter in November, 2016 respectively. The increase in price is attributed to the increase in input cost of milk production.



4.14 Measures/Initiatives taken for improving the Dairy Sector in the Country

- i) SFC in its meeting held on 19.10.2015 has approved a "Scheme for supporting State Dairy Cooperative Federations for providing working capital loans". Department of Agriculture, Cooperation & Farmers Welfare (DOAC&FW) vide letter dated 3.12.2015 has made the provision for the one time subsidy component under normal RKVY scheme during the current financial year within the yearly allocation to the States.
- ii) Amended the guidelines of RKVY scheme to incorporate a new component "Working capital for reprocessing of milk powder to extend shelf life of stocks nearing expiry date" as a short term measure valid until 30th June, 2016.
- iii) D/o Revenue vide its Notification No. 52/2015-Customs, dated 20.11.2015 had deleted the provision for import of Butter/ Butter Oil/ AMF at Nil import duty under TRQ.
- iv) D/O. Revenue vide its Notification No. 49/2015-Customs, dated 5.10.2015 had decided to increase import duty on Butter/Butter Oil/AMF from 30% to 40% with immediate effect upto 31.03.2016. It has been expended to 30.09.2016 vide notification number 24/2016-custom dated 28.03.20016 and further extended to 31.03.2017 vide notification number 53/2016-customs dated 29.09.2016
- v) D/O. Commerce has been requested on 17.12.2015 to increase the additional countervailing duty from 4% to 10% on Butter/Butter Oil/AMF.

4.15 Delhi Milk Scheme (DMS)

4.15.1 Delhi Milk Scheme (DMS) was set up in 1959 with the primary objective of supplying

wholesome milk to the Citizens of Delhi at reasonable prices as well as for providing remunerative prices to milk producers. The initial installed capacity of Delhi Milk Scheme was for processing /packing of 2.55 lakh liters of milk per day. However in order to meet increasing demand for milk in the city, the capacity was expanded in phases to the level of 5.00 lakh liters of milk per day. The Department has developed a web site <http://dms.gov.in> for use by related users.

4.15.2 I.S.O 22000-2005 & ISO 14001-2004 Certification.

4.13.2.1 DMS has been awarded ISO 22000-2005 Certification valid up to 05.05.2018 and ISO 14001 - 2004 certification valid up to 14.09.2018 by M/s IRQS Mumbai.

4.15.3. Procurement of Milk

4.15.3.1 Delhi Milk Scheme has been procuring raw/fresh milk from the State Dairy Federations of the neighboring States of Punjab, Haryana, Uttar Pradesh, Rajasthan, Madhya Pradesh and Bihar and from the Co-operative Societies/ Producers Companies & other companies.

4.15.3.2 The total quantity/average per day of milk procured by DMS since 2013-14 is indicated below:

Table 4.1: Milk Procured by DMS

(in Lakh Kgs)

Year	Total Qty. of milk procured.	Average/per day
2013-14	515.23	1.41
2014-15	887.95	2.43
2015-16	887.75	2.43
2016-17(up to Oct,2016)	412.76	1.93

4.15.3.3 During the current financial year 2016-17 (Up to Oct., 2016), DMS procured 1.93 lakh Kg. milk per day. DMS has been authorized to decide milk procurement rates

at its own level and it is delinked with Mother Dairy, Delhi. Therefore, it is expected that DMS shall be in position to procure around 2.20 lakh Kgs. of milk per day up to March, 2017 in view of flush season.

4.15.4 Production and Distribution of Milk

4.15.4.1 Delhi Milk Scheme is processing and supplying milk (Double Toned, Toned and Full Cream). DMS is also manufacturing & marketing Ghee, Butter, Paneer, Dahi, Chhachh and Flavoured Milk for citizens of Delhi.

4.15.4.2. DMS has a network of over 1077 outlets (including All Day Milk Stalls). The DMS also supplies milk to about 128 institutions such as Hospitals, Government Canteens, Hostels

and Defence Units etc. In addition, DMS also supplies milk to the consumers through milk distributors.

4.15.4.3. The milk booths are allotted to and manned by Ex-servicemen/ retired Govt. servants, physically handicapped, widows, unemployed persons.

4.15.5 Performance/capacity Utilization

4.15.5.1 The sale of DMS and custom packing of Sudha (COMFED, BIHAR) milk by DMS taken together has reached 2.87 lakh liters per day (LLPD) during the financial year 2016-17 (Upto Oct., 2016). The capacity utilization in term of sale of milk since 2013-14 is given in the table below:

Table 4.2: Performance of DMS

Year	Total quantity of sale of milk (In lakh litrs)	Average sale of milk (LLPD)*	%age of average sale of milk with reference to installed capacity of 5 LLPD.*(One litre pack)
2013-14	973.28	2.67	53.4%
2014-15	1051.31	2.88	57.6%
2015-16	1080.06	2.96	59.2%
2016-17(upto Oct.,2016)	614.36	2.87	57.4%

Note: 1.* LLPD (Lakh Liter Per Day/ One Liter Pack)

2. Capacity utilization was limited according to volume of sale of milk.

4.15.6 Financial Outlay

4.13.6.1. Expenditure on all head of accounts including the expenditure on inputs like raw milk, SMP, Butter, Butter Oil etc. and capital items is made from consolidated fund of Government of India through annual budget allocation of Ministry of Agriculture, Department of Animal

Husbandry & Dairying. Sale proceeds of milk and milk products are credited to the revenue account of the Government.

4.13.6.2. The funds provided/proposed and expenditure for the year 2015-16 (R.E.) and 2016-17 (B.E & R.E) are given in table 4.3 below:

Table 4.3: Expenditure of DMS

(₹ in Crores)

Head/Scheme	2015-16		2016-17 (Upto Oct,2016)		
	R.E. (Appro-ved)	Expendi-ture	B.E. (Appro-ved)	R.E. (Propo-sed)	Expendi-ture (Prov.) (Upto 31.10.2016)
1	2	3	4	5	6
I. NON-PLAN	444.30	371.43	529.00	410.00	220.54
II. PLAN (including civil & electrical works)	1.65	1.13	0.00	0.00	0.00

4.13.6.3 During the current financial year 2016-17 (upto Oct., 2016), DMS generated a surplus of ₹22.31 crore on cash basis.

4.15.7 REDUCTION IN THE STAFF STRENGTH OF DMS.

4.13.7.1 In pursuance of instructions issued by Ministry of Finance to down size Government machinery and to reduce the administrative expenses, the DMS decided to reduce its working strength by not making fresh recruitment. The total staff strength of DMS has come down from 671 as on 01.12.2015 to 639 as on 01.12.2016

4.15.8 UPGRADATION AND MODERNIZATION OF DMS PLANT.

4.15.8.1 The DMS plant which was installed at the time of its commissioning way back in 1959 and its machineries have been replaced /modernized as per the requirement from time to time. The plant capacity which was 3.75 lakh litre per day at the time of its commissioning had been increased up the level of 5 lakh litre per day in one litre pack as well as one type of milk.

4.15.8.2 During the current financial year 2016-17, one number of AC drives 2 KW/30HP with all safety devices (Model No. Series VLTFC 301 Make Danfoss) for Cream Separator has been installed.

4.15.8.3 In view of Point No. 4.13.8.1, there is need to modernize/up gradation of the plant to operate 5 lakh litre capacity.

(a) With optimum utilization of available resources and installed capacitor banks in Central Dairy, DMS could achieve a power factor greater than 0.98 thus affecting savings in electrical consumption.

(b) With optimum utilization of R.O. water and it's recycling the consumption of water has been brought down substantially in Central Dairy thus affecting savings in the water consumption.

4.15.8.4 The present capacity utilization of DMS is about 60% due to different types of milk and packets as well as low sale. Efforts are being made to utilize its capacity by increasing the sale of milk and milk products leading to reduction in losses. DMS is planning to appoint new distributors in the new areas of NCT of Delhi.

Chapter 5

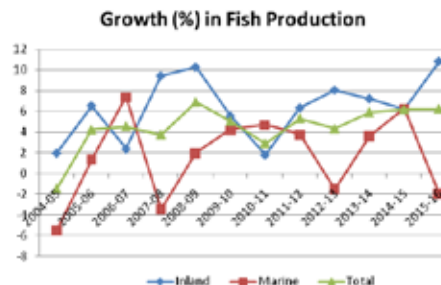
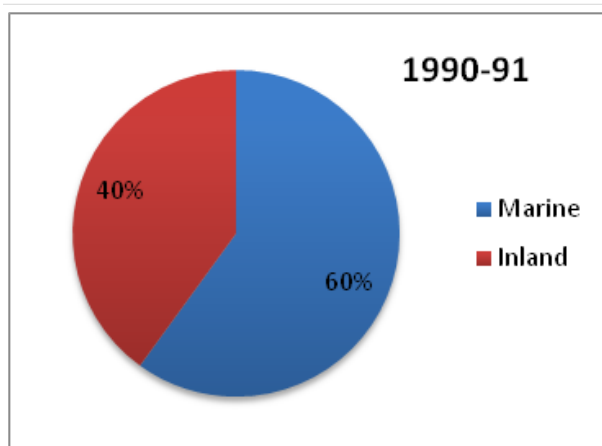
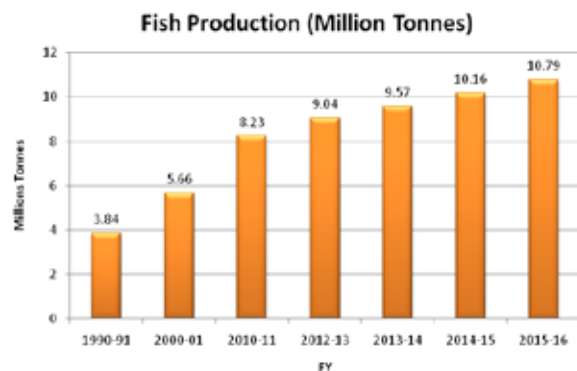
OVERVIEW OF INDIAN FISHERIES

OVERVIEW OF INDIAN FISHERIES

5.1 Introduction

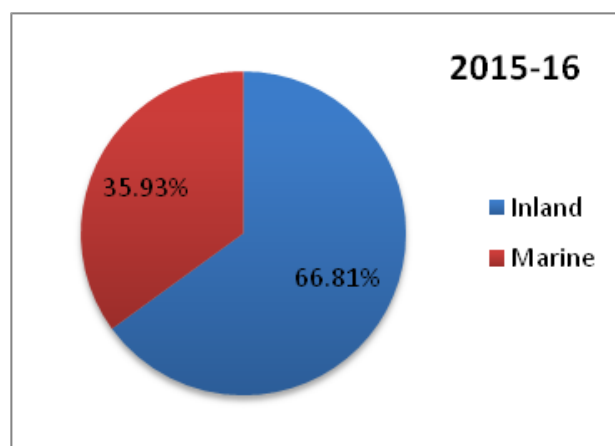
5.1.1 Presently India is the second largest fish producing and second largest aquaculture nation in the world. India is also a major producer of fish through aquaculture and ranks second in the world after China. The total fish production during 2015-16 (provisional) is at 10.79 million metric tonne (MMT) with a contribution of 7.21 MMT from inland sector and 3.58 MMT from marine sector. The fish production during first three quarters of 2016-17 has also shown an increasing trend and is estimated at 8.18 Million Tonnes (Provisional).

5.1.2 The fish production has increased from 3.84 MMT in 1990-91 to 10.79 MMT in 2015-16 (P). The growth in fish production has shown a cyclical pattern with an increasing long term trend.



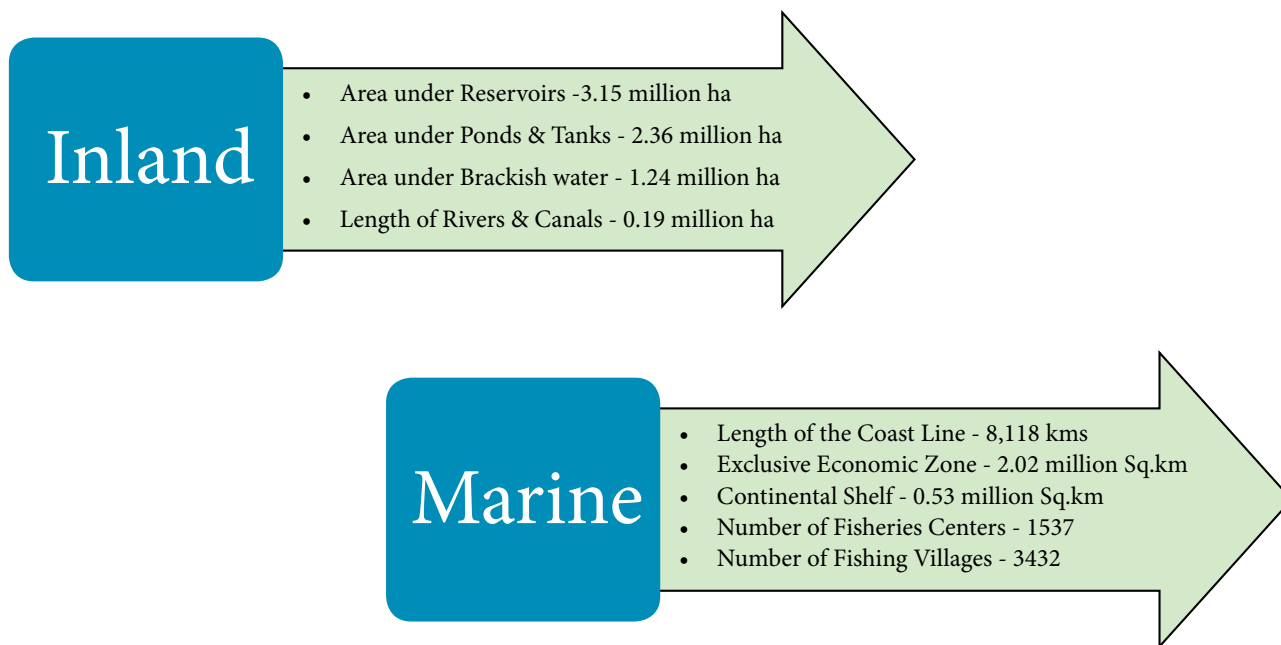
5.1.3 Fisheries is a sunrise sector with varied resources and potential, engaging over 14.50 million people at the primary level and many more along the value chain. Transformation of the fisheries sector from traditional to commercial scale has led to an increase in fish production from 7.5 lakh tonne in 1950-51 to 107.95 lakh tonne (Provisional) during 2015-16, while the export earnings from the sector registered at Rs. 30,420.83 crore in 2015-16 (US \$ 4.69 billion). The sector contributed about 0.9% to the National Gross Value Added (GVA) and 5.43% to the agricultural GVP (2015-16).

5.1.4 The historical scenario of Indian fisheries reveals a paradigm shift from marine dominated fisheries to a scenario where inland fisheries has emerged as a major contributor to the overall fish production in the country. As seen in the following graph, inland fisheries presently has a share of 66.81% in total fish production of the country.



5.1.5 Within inland fisheries there is a shift from capture fisheries to aquaculture during the last two and a half decade. Freshwater aquaculture with a share of 34 percent in inland fisheries in mid-1980s has increased to about 80 percent in recent years. It has emerged as a major fish producing system in India as a result of initiatives taken by the Government. Fish Farmers Development Agencies (FFDA)

were set up in various districts for delivering a package of technologies, practices, training and extension and for providing financial assistance to the beneficiaries. So far, about 0.65 million ha of water area have been brought under fish farming covering 1.1 million beneficiaries. Currently the average annual yield is around 3.0 tonnes/ha. At the same time training has been imparted to about 0.8 million fishers.



5.1.6 India's marine fisheries sub-sector (Approximately 1/3 production) is now performing with a similar trend with more than 60% Exclusive Economic Zone (EEZ) stocks over-exploited and the rest fully exploited. The marine resources of the country comprise an Exclusive Economic Zone (EEZ) of 2.02 million sq. km, a continental shelf area of 5,30,000 sq. km and a coastline of 8,118 km. The marine fishery potential in the Indian waters have been estimated at 4.41 MMT constituting more than 47% demersal, 48% pelagic and 5% oceanic groups. The dwindling trend in marine capture fisheries limits the scope of further augmentation in harvest capture as out of 1,368 species available, 200 commercially important species also require attention for their survival due to their complex food chain and inter-dependent existence.

5.1.7 Mariculture is the farming and husbandry of marine plants and animals in marine or brackish water environments. Apart from the open sea, there are many brackish water areas and low lying tidal areas spread over the country, having a scope for this activity. Mariculture in the country over the years was confined largely to bivalve molluscs viz., mussels, edible oysters and pearl oysters, and to some extent seaweeds. With a thrust on development of technologies pertaining to sea cage farming during last decade, developmental plans with both forward and back ward linkages are envisaged to allow these activities to become significant contributors to production of seafood in the country.

5.1.8 Although, inland fisheries have grown in absolute terms, the rate of growth in terms of its potential is not yet achieved. The vast inland

resources include a network of rivers, canals, estuaries, floodplain lakes and the ponds and tanks located in different geographical regions. It comprises 0.19 million ha of rivers and canals, 1.2 million ha floodplain lakes, 2.36 million ha of ponds and tanks and 3.15 million ha of reservoirs.

5.1.9 The manmade reservoir resources cover more than 3.0 million ha water spread area and are mostly distributed in varied climatic environment congenial for fish growth. The average fish production potential was estimated at 250 kg/ha of reservoirs and about 350 kg/ha for wetlands. While reservoirs and freshwater aquaculture would be the two main pillars of growth, other resources such as upland water bodies, floodplain lakes and wetlands, irrigation canals, saline and waterlogged areas also need to be gradually mainstreamed to start contributing to the production. Another major activity in aquaculture sector is the cage/ pen culture in open waters, which has picked up very well in recent years. It offers vast potential for inland aquaculture in the country. The production potential from sustainable cage culture for table fish production is about 50 kg/m³ with enormous possibility for further expansion and intensification.

5.1.10 The freshwater fish farming is lacking in quality inputs in terms of seed, feed, health management and marketing support. Programs aimed at production and distribution of quality seed and feed for aquaculture and also culture-based-capture fisheries; husbandry of farmed species and availability of quality water are essential to optimize production and productivity from inland fisheries and aquaculture in the country.

5.1.11 The cold water resources are distributed mainly in the form of upland streams, rivers, lakes and reservoirs that are located at medium to high altitudes of Himalayan corridor such as Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Sikkim, West Bengal and all

North-Eastern States. The Himalayan region has around 8,243 km long streams and rivers, 20, 500 ha natural lakes, 50,000 ha of reservoirs and 2500 ha brackish water lakes. These water bodies inhabit diverse kind of fish fauna of 258 cold water fish species. At present, the total fish production from upland areas constitute about 3 % of inland fish production of India which is a very small share to the overall production. Commercial farming of high value cold water species like exotic rainbow trout has been taken up successfully and estimable progress has been made. Jammu & Kashmir, Himachal Pradesh and Sikkim are the leading states in trout farming.

5.1.12 Brackish water estuaries or river mouth is another set of water bodies having the peculiarity of fluctuating salinity due to tidal effects which have huge potential for both fish and shell fish culture. Valuable fish like sea bass, pearl spot and shrimp could be cultured in large quantities. India has 1.24 million ha of brackish water area spread over all maritime States / Union Territories (UTs), but hardly 15 % of brackish water areas are developed for commercial farming. Shrimps, oysters, mussels, crabs, lobsters, sea bass, groupers, mullets, milk fish, cobia, silver pompano, pearl spot, ornamental fishes and sea weeds are being farmed to some extent. The Coastal Aquaculture Authority (CAA) is regulating these activities in saline and brackish water systems within 2 kms from the High Tide Line for sustainable development of coastal aquaculture sector.

5.1.13 In case of shrimp (*L. vannamei*) quality seed resources are an essential element of production. Hatchery and seed production techniques have so far been standardized for few commercial shrimps, crabs and fin fishes. Demonstration of feasibility of inland saline aquaculture in the state of Haryana and Punjab has opened up scope for bringing these resources under economic use which hitherto remained unfit for any other agricultural activity.

5.1.14 Ornamental fish farming, although a non-food activity also has a promising future and is likely to contribute to the overall growth of fisheries sector in the coming years in terms of foreign exchange earnings and additional livelihood opportunities both in the urban and rural areas.

- Marine- the oceanic resources available to India are estimated at 2.02 million sq.km, comprising 0.86 million sq.km on the west coast, 0.56 million sq.km on the east coast and 0.60 million sq.km around the Andaman & Nicobar Islands.
- Off late, Pangassius and Tilapia, native catfishes and freshwater prawns are picking up due to culture based production at a faster pace
- The three Indian Major Carp (IMC) species – Catla, Rohu and Mrigal together contribute a lion's share
- Indian waters harbor about 2358 species [877 freshwater, 113 brackish water and 1368 marine species]
- Exotic carps form the next important group in the IMC segment
- In the shrimp segment, most of the production comes from *L. Vannamei*.
- Rainbow trout culture and rehabilitation of native Mahaseer in cold waters of the Himalayan corridor are promising ventures

5.2 Thrust areas

5.2.1 It has been observed that inland fishery today is dominated mainly by the freshwater fishery. In order to enhance production, there is a need for diversification of fish production in other areas like integrated fish farming, cold water fisheries, riverine fisheries, capture fisheries, brackish water fisheries etc. The recent measures therefore have targeted Intensive Aquaculture in ponds and tanks through integrated fish farming, carp polyculture,

freshwater prawn culture, running water fish culture and development of riverine fisheries.

5.2.2 Expansion of area under aquaculture has to become an important option to boost fish production. In this context, derelict water bodies could be immensely useful and could be an important resource to boost fish production for meeting the future fish demands of the country. Coastal Orissa for instance, is endowed with large areas of unutilized water bodies like derelict canals and drains. Similarly, Brahmaputra basin of Assam has enormous beels lying idle. There are about 1.3 million hectares of beels and other derelict water bodies in the country. Bringing these water bodies into the ambit of fisheries will boost fish production tremendously and hence expansion of fisheries in these water bodies is one of the focus areas of the department for increasing fish production.

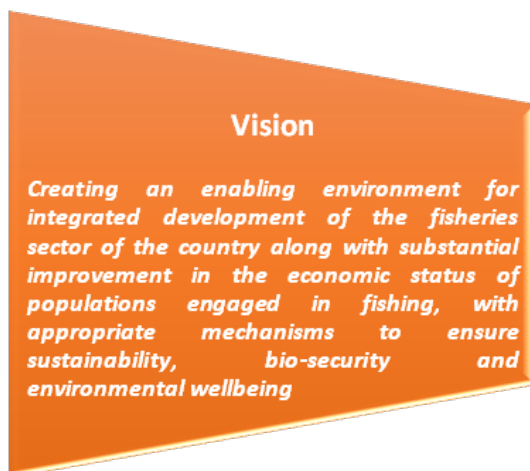
5.2.3 Reservoirs, which are largely untapped in India, have great potential for development of fisheries. Reservoir Fisheries Development is therefore a thrust area of the department. By promoting technologies like cage culture, the productivity of the reservoirs can be enhanced manifold. Due to large initial investment, this technology has so far not been successfully implemented in India.

5.2.4 The Government recognizes the need for availability of quality seed and feed for sustained growth in inland fish production in the long run. As per an estimate, the total fish seed required for optimal stocking in the existing ponds, new ponds and reservoirs is about 60,000 million fry. As against this, the seed production in 2015-16 was about 40,540 million fry. Thus there is a gap of about 19,460 million fry. Setting up of brood banks and hatcheries across the country, is therefore a priority area for the department.

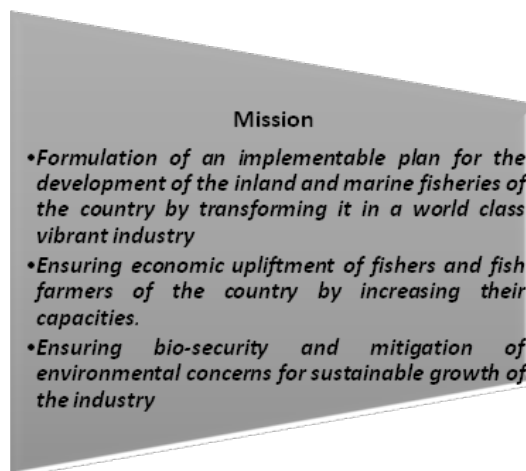
5.2.5 Responsible aquaculture and prevention and management of aquatic diseases, organic farming, and induced breeding are some of the other challenges to be addressed in this sector for improving productivity.

5.3 New Initiatives: Blue Revolution

5.3.1 Foreseeing high potential, the Hon'ble Prime Minister has called for "a revolution" in the fisheries sector and has named it as "Blue Revolution". The Blue Revolution,



with its multi-dimensional activities, focuses mainly on increasing fisheries production and productivity from aquaculture and fisheries resources, both inland and marine.



5.3.2 OBJECTIVES

- To increase the overall fish production in a responsible and sustainable manner for economic prosperity
- To modernize the fisheries with special focus on new technologies
- To ensure food and nutritional security
- To generate employment and export earnings
- To ensure inclusive development and empower fishers and aquaculture farmers

5.3.3 CENTRAL PLAN SCHEME WITH CENTRAL SECTOR COMPONENTS

The Ministry of Agriculture and Farmers Welfare, Department of Animal Husbandry, Dairying & Fisheries has accordingly restructured the scheme by merging all the ongoing schemes under an umbrella of Blue Revolution. The restructured scheme provides focused development and management of fisheries, covering inland fisheries, aquaculture, marine fisheries including deep sea fishing, mariculture and all activities undertaken by the National Fisheries Development Board (NFDB).

The restructured Centrally Plan Scheme with Central Sector components on Blue Revolution: Integrated Development and Management of Fisheries formulated at a total Central outlay of 3000 crore for five years has the following components:

- National Fisheries Development Board (NFDB) and its activities,
- Development of Inland Fisheries and Aquaculture,
- Development of Marine Fisheries, Infrastructure and Post-Harvest Operations,
- Strengthening of Database & Geographical Information System of the Fisheries Sector,
- Institutional Arrangement for Fisheries Sector and
- Monitoring, Control and Surveillance (MCS) and other need-based Interventions.
- National Scheme of Welfare of Fishers

The Cabinet Committee on Economic

Affairs (CCEA) in its meeting held on 22nd December, 2015 considered and approved the aforementioned proposal of the Ministry of Agriculture and Farmers Welfare, DADF.

The Administrative Approval of the Scheme was issued on 20.05.2016 while the guideline has been circulated on 30.06.2016 with revised cost norms for the entire gamut of activities in the fisheries sector

5.3.4 FUNDING PATTERNS

Broad funding pattern for the new activities under the marine and inland fisheries development projects under the scheme are as below:

- (a) 50% of the project/unit cost for general States, leaving the rest to State agencies/organisations, corporations, federations, boards, Fishers cooperatives, private entrepreneurs, individual beneficiaries.
- (b) 80% of the project/unit cost for North-Eastern/Hilly States leaving the rest to State agencies/Organizations, Cooperatives, individual beneficiaries etc.
- (c) 100% for projects directly implemented by the Government of India through its institutes/organisations and Union Territories.

The components of the scheme namely (a) Strengthening of Database & Geographical Information System of the Fisheries Sector, (b) Institutional Arrangement for the Fisheries Sector and (c) Monitoring, Control and Surveillance (MCS) and other need-based Interventions would be implemented Departmentally with 100% central funding.

5.3.5 Scheme Components

5.3.5.1 Development of Inland Fisheries and Aquaculture

This component mainly focuses on increasing of fish productivity from the existing aquaculture farms and water bodies besides aquaculture

area expansion and species diversification.

The activities covered under this component are;

- i. Construction of new ponds
- ii. Renovation of existing ponds
 - a. Renovation of Mahatma Gandhi National Rural Employment Guarantee Act (MNREGA) ponds
 - b. Rejuvenation of urban/semi urban / rural lakes tanks for culture
- iii. Input cost for freshwater fish culture and brackish water fish/shrimp culture
- iv. Establishment of fish seed hatcheries
- v. Establishment of freshwater/brackish water prawn hatcheries
- vi. Solar power support system for aquaculture
- vii. Cold water fisheries and aquaculture
 - a. Construction of permanent farming units and raceways
 - b. Running cold water fish culture in earthen units
- viii. Development of water logged areas
 - a. Development of waterlogged areas
 - b. Input cost
- ix. Productive utilization of Inland Saline/ Alkaline waters for aquaculture
 - a. Construction of new ponds
 - b. Input cost
- x. Inland capture fisheries (village ponds & tanks)
 - a. Fish seed rearing units
 - b. Input cost
 - c. Craft and gears

- d. Construction of landing centers
- e. Riverine Fisheries Conservation
- xi. Integrated development of reservoirs
 - a. Need based activities from a broader perspective to make self-resilient unit
- xii. Establishment of feed mills.
- xiii. Installation of cages/pens in reservoirs and other open water bodies.
- xiv. Re-circulatory Aquaculture System (Low cost)
- xv. Stocking of fingerlings in Beels/Wetlands
- xvi. Creation of portal for advisory services to farmers on mobile and internet
- xvii. Training and skill development of fish farmers and other stakeholders

5.3.5.2 Development of Marine Fisheries, Infrastructure and Post-Harvest Operations

This component focuses on continuing harnessing of near shore fisheries resources on a sustainable & environmental friendly manner and up-gradation of technology to harness the untapped deep sea and oceanic fishery resources. It also includes capacity building and training in marine fishing and allied activities and encouragement of mariculture in open seas and creation of essential fisheries infrastructure facilities.

The activities covered under this component are:

- i. Motorization of traditional craft.
- ii. Safety of fishermen at sea.
- iii. Assistance to traditional fishermen for artisanal boats and ice boxes.
- iv. Rebate on High Speed Diesel (HSD) for fishers.
- v. Establishment and operation of Vessel Monitoring Systems (VSM).
- vi. Promotion of non-conventional methods for environment friendly fishing practices.
- vii. Promotion of mariculture in the form of sea cages, sea weed cultivation, bi-valve cultivation and pearl culture.
- viii. Management of marine Fisheries
- ix. Establishment of fishing harbors and fish landing centers
- x. Assistance for dredging of fishing harbors/fish landing centers.
- xi. Development of post-harvest infrastructure; Ice plants, cold Storages and ice plants cum cold storages.
- xii. Renovation/modernization of ice plants, cold storages and ice plants cum cold storages.
- xiii. Development of retail fish markets and allied infrastructure.
- xiv. Setting up of mobile/retail fish out lets.
- xv. Assistance for fish transport infrastructure like
 - a. Refrigerated trucks /container of a minimum 10 MT capacity.
 - b. Insulated trucks of minimum 10 MT & 6 MT capacities.
 - c. Auto rickshaw, motor cycle & bicycle with ice box.
- xvi. Innovative activities related to fisheries and the industry.

5.3.5.3 National Scheme on Welfare of Fishermen

This component focuses some of the critical and essential welfare activities for fishers. The activities covered in this component are;

- i. Saving cum relief for the fishermen.
- ii. Provision of Housing for the fishermen.
- iii. Other basic amenities like drinking water facility.

- iv. Construction of community hall with sanitation, water supply and electrification facility.
- v. Group accident Insurance for active fisherman.
- vi. Grant in aid to the National Federation of Fishers Cooperatives Ltd. (FISHCOPFED).

5.3.5.4 Strengthening of Database & Geographical Information System of the Fisheries Sector

This component mainly focuses on creation of authenticated and reliable fisheries database that are essential for formulation of policies, programmes/schemes etc.

The activities covered under this component are:

- (i) Assistance to the State Governments/UTs for collection and supply of fisheries data regularly on a quarterly basis,
- (ii) Development of suitable IT based system for collection, analysis and compilation of fisheries data,
- (iii) Development of geographical information system,
- (iv) Mapping of water-bodies to assess the fisheries resources potentials & their sustainable harnessing,
- (v) Compilation/ publication and dissemination of fisheries data-based to the needy organization/Departments/ Ministries etc.

5.3.5.5 Monitoring, Control and Surveillance (MCS) and other need-based Interventions.

This component intends to create a Monitoring Control and Surveillance (MCS) Regime for marine fisheries towards compliance of various national and international obligations.

The activities covered under this component are;

- (i) Continuing issuing the biometric ID card to marine fishers,
- (ii) Continue to implement the fishing vessels registration project (ReALCraft),
- (iii) Up-gradation of the existing 166 registration centers into Fisheries Monitoring, Control and Surveillance Centers (FMCS) etc.

5.3.5.6 National Fisheries Development Board (NFDB)

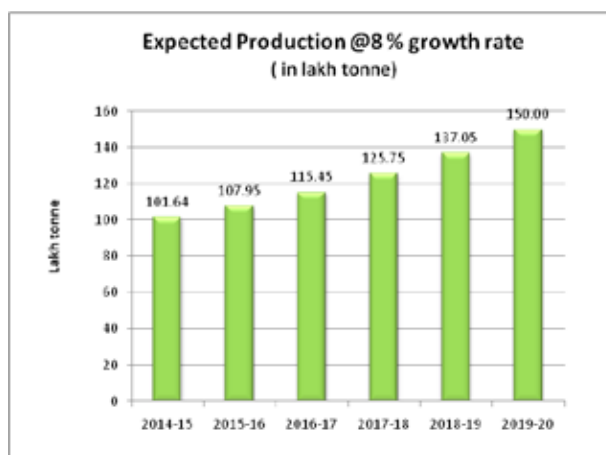
5.3.5.6.1 National Fisheries Development Board (NFDB) was set up in September, 2006, with its headquarters at Hyderabad to realize the untapped potential of fisheries sector in inland and marine fish capture, culture, processing & marketing of fish, and overall growth of fisheries sector with the application of modern tools of research & development including biotechnology for optimizing production and productivity from fisheries. The activities of the Board are focused towards increasing the fish production and productivity in the country, to enhance the exports of fish and fishery products and to provide employment to more than 3.5 million persons by extending assistance to various agencies for implementation of activities. It also acts as a platform for public-private partnership for fisheries.

5.3.5.6.2 Some of the important objectives of NFDB include sustainable management and conservation of aquatic resources, creation of employment opportunities, to improve production, processing, storage, transport and marketing of fish products, to apply modern tools of research and development including biotechnology for optimizing production and productivity from fisheries, to train manpower and to enhance contribution of fishery towards food and nutritional security.

5.4 Major Deliverables and Achievements

Achieving growth rate of about 8% annually on a sustainable basis over a period of five years. This would be possible if production is

targeted at 15 million tonnes by end of 2019-20 (as against production of 10.79 million metric tonnes at the end of 2015-16). The projected fish production on account of implementation of the scheme is presented as below:



5.4.1 Year-wise allocation and utilization of funds for development of fisheries during the 12th Plan is as below:

(Rs. in crore)

Year	BE	RE	Expenditure
2012-13	340.70	312.14	298.33
2013-14	371.50	332.35	318.13
2014-15	480.96	351.56	353.36
2015-16	476.95	455.86	416.80
2016-17	450.00	424.25	*296.14
Total	2120.11	1876.16	1682.76

* Expenditure up to 31.01.2017

5.4.2 Integrated National Fisheries Action Plan-2020

5.4.2.1 The Department has prepared a detailed Integrated National Fisheries Action Plan-2016 (NFAP) for achieving 15.00 million tonne over all fish production by 2019-20. It aims at enhancing fish production and productivity and to achieve the concept of Blue Revolution. The approach was initiated considering the various fisheries resources available in the Country like ponds & tanks, wetlands, brackish water, cold water, lakes & reservoirs, rivers and canals and the marine sector. All States and UTs have been

asked to prepare State Action Plan for 5 years in line with NFAP for achieving Blue Revolution in their States/UTs. The Blue Revolution aims at production and distribution of quality seed and feed for aquaculture and also culture-based-capture fisheries; husbandry of farmed species and availability of quality water are essential to optimize production and productivity from inland fisheries and aquaculture in the country. If we look in detail, the challenges to the sector can be categorized as following:

- Investment capital impediments in the sector.
- Low investment in the sector coupled with limited capabilities of fishers and fish farmers.
- Inadequate supply of seed, feed and genetic resources.
- Slow development and adoption of new and improved farming technologies.
- Land and water related problems
- Inadequate cold chain; market, trade and safety.
- Environmental integrity and a vicious circle of low productivity.

5.4.2.2 Though inland fisheries sub-sector is posting a steady growth the accessible resources are still untapped. Moreover, the present fish productivity (2.9 MT/ha) of freshwater aquaculture is far below the potential leaving ample scope for vertical as well as horizontal enhancement.

5.4.2.3 In marine sector, sustainability and optimum utilisation of the existing potential is important to ensure fishers' welfare. The small-scale fishery needs protection through empowering the fishers with better crafts and gears. Deep sea fishing is another area, to be explored to harvest the resources.

5.4.2.4 One of the most significant characteristics of Indian fisheries sector is its small-scale nature. Besides being a source of protein rich

nutritious food, income and livelihood to poor fishers, the fisheries sector is important for engaging the rural population in a number of ancillary activities i.e. marketing, retailing, transportation etc.

5.4.2.5 Recognizing the potential and possibilities, Government of India has envisaged a program to unlock the country's fisheries sector through an integrated approach at a scale necessary to make a difference. The Blue Revolution, in its scope and reach, focuses mainly on creating an enabling environment for an integrated and holistic development and management of fisheries for the socio-economic development of fishers and fish farmers, keeping in view the sustainability, bio-security and environmental concerns. Thrust areas have been identified for enhancing fisheries production and productivity from aquaculture and fisheries resources, both inland and marine, during the ensuing years through the active participation of all stakeholders.

5.4.3 Strategies: To unlock prospects

The programs and strategies for fisheries and aquaculture development in the country under the Blue Revolution has been developed keeping in view the objectives identified for the sector. Greater emphasis will be on infrastructure with an equally strong focus on management and conservation of the resources.

5.4.3.1 Integrated approach for inland fisheries development

Integration of various production oriented activities such as: (i) Production of quality fish seeds, (ii) Cost effective feed, (iii) Availability of technology, (iv) Post harvest facilities and processing (v) Marketing facilities in close vicinity where commercial aquaculture is undertaken would enhance fish production. Cluster approach by forming groups among entrepreneurs and progressive fish farmers will be encouraged to adopt Good Aquaculture Practice in hatcheries and farming.

- (i) Pond aquaculture: The smaller water bodies in the form of ponds and tanks with a water spread area of up to 5 ha are aimed for semi-intensive to intensive freshwater aquaculture.
- (ii) Culture based fisheries in wetlands and reservoirs: Supplementary stocking of fingerlings of carps and other relevant species, scientific fisheries management practices; developing adequate rearing space for ex-situ fingerling production, in-situ seed production in floating cages and pens.
- (iii) Fish seed production: Quality fish seed is a prime requirement for developing aquaculture and culture-based fisheries. A National Freshwater Fish Brood Bank is established by National Fisheries Development Board (NFDB) for production of good quality brooders of known varieties with the assistance of Central Institute for Freshwater Aquaculture (CIFA) & National Bureau of Fish Genetic Resources (NBFGR). Other issues to be considered for strengthening seed production sector are: Establishment of brood banks in each state and up-gradation of hatcheries for maintaining and holding the brood stock as well as seed. In-situ/ex-situ production of seed for stocking in reservoirs and other open waters. Technology transfer for breeding of commercially important fishes, especially those species holding market value including Mariculture.
- (iv) Promotion of feed based aquaculture: Development of fish feed mills and scaling up of production from the existing feed mills is envisaged besides popularization of extruded feed based aquaculture to achieve better productivity
- (v) Diversification of culture species:

Freshwater aquaculture in India is carp-centric hence introduction of exotic and other diversified species that can contribute to increase in fish production, without any adverse impact on the native species and the ecosystem shall be promoted.

- (vi) Additional infrastructure for SPF shrimp seed: Shrimp Brood Multiplication Centers (BMCs) are the facilities which receive the Specific Pathogen Free (SPF) Post Larvae (PL) from Nucleus Breeding Centre (NMB) and rear PL up to adult brood stock for supply to hatcheries under strict biosecurity and close disease surveillance. It is proposed to establish more BMCs and hatcheries to fill the gap.

5.4.3.2 Integrated approach for marine fisheries development

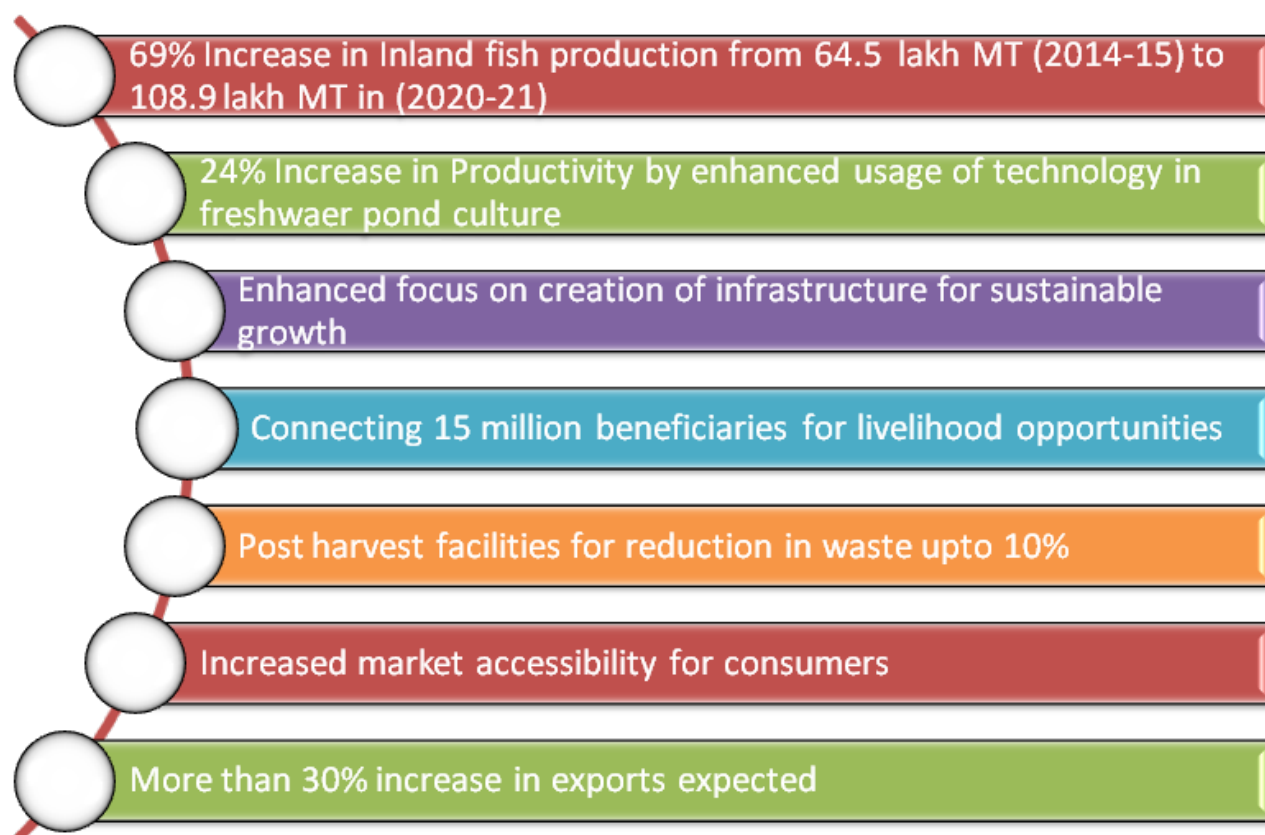
- (i) Capture Fishery: The conversion and up-gradation of existing fishing vessels can contribute in the reduction of fishing pressure on the coastal waters and this improved efficiency will help in harvest of the under tapped resources like tunas, bill fishes, pelagic sharks and oceanic squids etc.
- (ii) Mariculture: Open sea farming of fin fish and shell fish species such as cobia, pompano, sea bass, groupers, snappers and lobsters in cages in different locations offer promising prospects of sea farming, developing into a major enterprise.

5.4.2.3 Policy level interventions

Areas which require policy level interventions for enhancing fish production and productivity are Convergence with related schemes such as Mahatma Gandhi National Rural Employment Guarantee Act (MNREGA), Rashtriya Krishi Vikas Yojana (RKVY), Sagarmala etc.

- i. Fisheries and Aquaculture are included in the State List however, the Union Government supplements the efforts of the States/Union Territories (UTs) for development of the sector. Inland sector is by and large, fully in the domain of State Governments while marine fisheries is a shared responsibility between the Central and coastal State Governments. Coastal state governments & UTs are responsible for development and management/regulation of fisheries in the sea waters inside the 12 nautical miles (22 km) territorial limit. Government of India is responsible for the development and regulation of fisheries in the EEZ waters between 12 and 200 nautical miles (370 km).
- ii. Blue revolution is to be implemented with active cooperation of State Governments. To make it an implementable plan, State Governments were involved from the initial stage, as a measure of building confidence among the implementing agencies. Plan formulation was started with the assessment of current status of fisheries activities in all states. In depth discussions were held to arrive at some workable mechanisms and to streamline the quantum of targets to ensure smooth operations at time of execution.

Envisioned Impact of Integrated National Fisheries Action Plan



An abstract of an Integrated National Fisheries Action Plan (NFAP) is at Annexure-I.

5.4.4 Achievements during last 2 years (2014-15 & 2015-16)

- | | |
|--|--|
| 1. Under Saving-cum-Relief on an average 4.32 lakh fishers benefitted annually | 9. 21 fishing harbours/landing centres were supported benefiting about 21000 fishers. |
| 2. Total 9603 fishermen houses approved | 10. The relief amount under Saving-cum-Relief component to fishermen is enhanced from Rs.900 per month to Rs.1500 per month. |
| 3. On an average Rs.49.29 lakh fishers insured annually | 11. The unit cost of fishermen house is enhanced from Rs.0.75 lakh to Rs.1.20 lakh in General States and Rs.1.30 lakh in North Eastern & Himalayan States. |
| 4. 26869 hectares area developed for aquaculture benefiting 63372 fish farmers. | 12. Total 58 Fish markets have been constructed. |
| 5. 4399 traditional crafts were motorized benefiting 21995 fishers. | 13. 17165 mobile fish vending vehicles has been issued to fishers. |
| 6. 9212 safety kits/equipment supplied benefiting 73696 fishers. | 14. Total 20,705 fishers have been trained. |
| 7. 139 intermediate craft were assisted benefiting 1668 beneficiaries. | |
| 8. 32 ice plant and other post harvest infrastructure projects were assisted benefiting about 480 fishers. | |



Demonstration of Open Sea Cage Culture to fishermen through CMFRI, Kochi



Cage culture in Jharkhand

5.4.5 Celebration of World Fisheries Day, 2016: Department of Animal Husbandry Dairying and Fisheries has successfully organized World Fisheries Day on 21st of November, 2016 at Vigyan Bhawan, New Delhi. Shri Radha Mohan Singh, Hon'ble Union Minister for Agriculture and Farmers Welfare and Shri Sudarshan Bhagat, Hon'ble Minister of State for Agriculture and

Farmers Welfare inaugurated the function. More than four hundred participants attended the function, comprising of VIPs, Senior Officials of Government of India, State Governments, UTs, Fishers, Fish Farmers, representatives of Fisheries Cooperatives, Entrepreneurs/Exporters and other related stakeholders.



For realizing the Blue Revolution in the Fisheries sector and achieving the fish production of 15.00 MT by 2019-20, the Department has prepared the Integrated National Fisheries Action Plan and which was released by Hon'ble Union Minister for Agriculture and Farmers Welfare during the celebration of World Fisheries Day on 21st November, 2016. Along with this, the Guidelines for Cage culture in Inland Open Water bodies in India was also released by the Hon'ble Union Minister for Agriculture and Farmers Welfare. Entrepreneurs, who have done commendable work in the fisheries sector were felicitated by the Hon'ble Union Minister for Agriculture and Farmers Welfare. To show case the various best practices and other activities taken up in the fisheries sector an exhibition was also held.

5.4.6 Swachhta Pakhwada, 16th- 31st October, 2016 : All the six subordinate institutes/ organizations under the Fisheries Division and the States/UTs were requested to conduct the Swachhta Pakhwada during the period 16th -31st October 2016. Date-wise Plan of Action was prepared for this purpose and circulated to all the subordinate institutes/offices under this Division for implementation. The subordinate institutes were also directed to involve the Hon'ble Members of Parliament in various stages of Swachhta Pakhwada in their respective constituencies. The National Fisheries Development Board (NFDB), Fishery Survey



of India (FSI), Central Institute of Fisheries Nautical and Engineering Training, (CIFNET), National Institute of Fisheries Post Harvest Technology and Training (NIFPHATT), Central Institute of Coastal Engineering for Fishery (CICEF), Coastal Aquaculture Authority (CAA) in coordination with State/UTs conducted the following major activities during the Swachhta Pakhwada:

- i. Cleaning of 15 wholesale & 20 retail Fish markets in 15 States.
- ii. Cleaning of Institute Buildings and premises by all the Subordinate institutes under Fishery Division.
- iii. 15 number of awareness camps including Padayatra (procession) on hygienic fish handling, maintaining cleanliness in fish markets, cleanliness in processing, cleanliness in marketing etc. and distribution of Pamphlets.
- iv. Conducting of three State level Workshops viz., (i) Recycling of waste through integrated fish farming for NE States at NFDB NE Center, Guwahati (ii) Waste Water Aquaculture, Nalban, Kolkata (iii) Hygienic Fish handling at Guwahati, Assam

Hon'ble Members of Parliament viz., Prof. K.V.Thomas from Kerala, Shri. Vijay Kumar from Tamil Nadu, Shri Jugal Kishore from

Uttar Pradesh, Fisheries Minister from West Bengal, Mayor and Councilor from Kerala and Tamil Nadu, Senior officials from the State Fisheries Department, District Collectors have actively participated in the Swachhta Pakhwada activities. Also, the Fish vendors, retailers, net makers, students, staff and trainees of the institutes, members of fisherman associations and general public have also been involved in the various activities under taken during Swachhta Pakhwada across the State/UTs. The awareness camps/cleaning drives were taken up across the country with the help of State/UT Governments. Some of the notable activities were held in Bilaspur and Durg in Chhattisgarh, Guwahati, Silchar, Cachar in Assam, Bishnupur in Manipur, Nellore in Andhra Pradesh Cuddalore and Nagercoil in Tamil Nadu and also in Kolkatta Bangalore, Lucknow, Ranchi and Kochi. These activities focused on cleaning of fish markets, awareness camps, workshops etc.

5.4.7 Likely achievements under the scheme 'Blue Revolution: Integrated Development and Management of Fisheries' during the period 2016-17 to 2019-20

1. Fish production during 2019-20 targeted at 15 Million Tonnes
2. More stress on Aquaculture
 - a. About one lakh fishers will be benefited by increase in



Stocking of fish fingerlings in reservoir

- productivity and area expansion.
 - b. About 2 lakh fishers will be benefited under reservoir fisheries.
 - c. About 2 thousand fishers will be benefited under wetland development and cold water fisheries.
3. Under Saving-cum-Relief on an average about 4.5 lakh fishers will be benefitted annually.
 4. About 24549 fishermen houses will be constructed.
 5. Under insurance on an average about 50 lakh fishers will be covered annually.
 6. About 9282 hectares area will be developed for aquaculture benefitting about 18564 fish farmers.
 7. About 10,000 traditional crafts will be motorized benefitting about 50,000 fishers.
 8. About 5000 safety kits/equipment to be supplied benefitting about 40000 fishers.
 9. About 29 ice plant and other post harvest infrastructure projects to be assisted benefitting about 435 fishers.
 10. About 10 fishing harbours/landing centres will be supported benefitting about 10000 fishers.





Fish Seed rearing in Beels

5.5 Fisheries Institutes

5.5.1 National Fisheries Development Board (NFDB)

5.5.1.1 During 2016-17 a total amount of ₹42.63 crore was released to the States / UTs and other user agencies for implementation of NFDB schemes. During 2016-17 an amount of ₹347.96 lakh has been released to 11 States for implementation of various activities like construction of ponds and tanks in 17.77 ha, Renovation of ponds and tanks in 13.06 ha, setting up of 9 fish seed hatchery, setting up of 3 fish feed mill and setting up of one unit of Recirculatory Aquaculture System (RAS) by R. Vishwanadha Raju, Mahboobnagar district of Telangana and to other projects taken up during previous years.

5.5.1.2 During 2016-17 an amount of ₹1211.28 lakh was released to 16 States for modernization of 2 whole sale fish market; setting up of 5 modern fish retail markets; setting up of 3 retail outlets; 100 mobile fish vending vehicles to fishers, organizing 4 fish festivals and one cold chain development.

5.5.1.3 During 2016-17, NFDB spent an amount of ₹190.22 lakh under Human Resource Development towards training of farmers/fishers, department officials and aquapreneurs

on various aspects of fisheries. During 2016-17 under HRD activity NFDB conducted following training programmes, workshop and meetings:

- a) Brainstorming Workshop on Role of ATARIs in Development of Fisheries
- b) Awareness Programme on Integrating Fisheries with Apiculture
- c) Training Programme on preparation, Appraisal, Monitoring & Evaluation of Fisheries Projects
- d) Planning Workshop on Financing Fisheries Sector
- e) National Orientation Workshop for the Fisheries SMS
- f) Refresher Training Programme for Middle Level Extension Functionaries on New Dimensions in Extension Management
- g) Governance Workshop for the NGOs working with Traditional Fishermen
- h) Training Programme on Preparation of Fisheries Projects
- i) Training Programme for Aquapreneurs on Advances in Fisheries Technology and Extension Management for Fisheries Development

- j) Induction Training Program for the Newly Recruited Fisheries Extension Officers from State Department of Fisheries
- k) Refresher Training Programs for the State Fisheries Department Officials and Scientists from Fisheries Colleges & KVKs
- l) Fisheries Skill Advisory Board Consultation Meeting
- m) Indigenous technology for saving Pangasius seed in winter months in earthen ponds
- n) Meeting to finalize the Zone VIII fisheries Capacity Development programmes”
- o) Seminar on Status of Artemia Culture in India and Future Prospects
- p) Consultative Workshop on finalisation of Job Roles in Fisheries Sector developed by ASCI
- q) Review Meet on MUDRA Loan Scheme

5.5.1.4 During 2016-17 an amount of ₹1308.21 lakh was released to 3 States toward taking up cage culture activities, and training on cage culture management in reservoirs.

5.5.1.5 During 2016-17 an amount of ₹449.65 lakh was released under ornamental fisheries /other activity to 22 States towards establishment of 19 medium/backyard ornamental fish hatcheries, one integrated ornamental unit, 3 aquarium fabrication units, project on National Disease Surveillance Programme and awareness programme during Swachta Pakhwada celebration.

5.5.1.6 During 2016-17 an amount of ₹40.24 lakh was released under Coastal Aquaculture to Kerala and Andhra Pradesh States toward establishment of aquatic animal health laboratory at Kerala University of Fisheries and Ocean Studies, Kochi and Acharya Nagarjuna University, Guntur, Andhra Pradesh taken up during 2013-14 and 2014-15 respectively.

Water Fisheries to Jammu & Kashmir for establishment of Inland Aquatic Animal Health and Environment Management Laboratory at College of Fisheries, Rangil Ganderbal, Jammu & Kashmir taken up during 2014-15.

5.5.1.8 An amount of ₹601.47 lakh was released under Infrastructure Post Harvest Processing towards modernization of fishing harbours and fish landing centers in Gujarat, Tamil Nadu and Kerala taken up in previous years (release of subsequent instalments for completion of works).

5.5.1.9 During 2016-17 an amount of ₹102.80 lakh was released under TUP towards Technology Up-gradation projects, conducting workshop and seminars to 8 states/UTs. During 2016-17 two Technology Up-gradation projects given to ICAR-CIBA and one to ICAR-CIFA.

5.5.1.10 During 2016-17, the following meetings have been convened:

1. NFDB Funded Projects in the State of Assam Reviewed on 27th April, 2016 at Meen Bhawan, Guwahati.
2. National Consultation on NFDB Outreach, organized on 12 April 2016 at NFDB, Hyderabad.
3. Two-day National Consultation on Ornamental Fish was conducted at NFDB, Hyderabad on 27 and 28 April 2016.
4. National Workshop on Breeding and Culture of *Amblypharyngodon mola* conducted on 3 May 2016 at NFDB, Hyderabad.
5. Workshop on Financing Fisheries Sector jointly organized by NIRD&PR and NFDB, Hyderabad on 4-5 May 2016.
6. Meeting conducted to finalize Training Programmes in Fisheries from KVKs in the region under ATARI Zone-V, Hyderabad on the 19 May 2016.
7. Meeting on ‘Finalization of Fisheries

- Capacity Development Programmes' through KVKs held at ICAR-ATARI, Bengaluru on 25 May 2016.
8. Annual Review Meeting of NFDB Funded Project "National Surveillance Programme for Aquatic Animal Diseases" (NSPAAD) was held at NBFGR, Lucknow on 27 and 28 May 2016.
 9. NFDB organizes Workshop to formulate a National Level 'Project on Amblypharyngodonmola' at CIFRI, Barrackpore, West Bengal on 31 May 2016.
 10. NFDB, CAA and MPEDA Joint Inspection of SPF L. vannamei Hatcheries in Gujarat undertaken on 24 May 2016.
 11. Workshop on 'Culture of Lesser Known Fish Species of Commercial Importance in North East India' held at NFDB, Guwahati, Assam on 16 July 2016 at the campus of the North-eastern Regional Centre of NIRD&PR, Guwahati.
 12. NFDB sponsored Interactive Workshop on 'Aquatic Animal Diseases of Assam' held at Guwahati on 20 September 2016 at the ICAR-CIFRI Regional Centre, Guwahati, Assam, under the NFDB funded major research project entitled "National Surveillance Programme for Aquatic Animal Diseases" (NSPAAD).
 13. NFDB funded Projects on Ornamental Fisheries reviewed at NFDB, Hyderabad on 7 June 2016 at NFDB, Hyderabad.
 14. Workshop to finalize Fishery Project Proposals from KVKs for NFDB Funding organized at ICAR-ATARI, Kolkata on 8 June 2016.
 15. Review Meeting on Promising Fishery Technology organized by ICAR-ATARI Jabalpur, at CIFE Kolkata Centre, Kolkata on 9 – 10 June 2016.
 16. Interactive meeting with Agencies undertaking Monitoring and Evaluation Studies held on 23 June 2016 at NFDB Hyderabad.
 17. A meeting to partner with NETFISH of the MPEDA to train Traditional Marine Fisherfolk was held at NFDB on 13 June 2016.
 18. National Level Committee Meets to Develop Guidelines for Cage Culture in Inland Water Bodies was held at NFDB, Hyderabad on 14 June 2016.
 19. NFDB constituted Technical Experts Committee met to screen Technology Upgradation Project Proposals on 20 July 2016 at NFDB, Hyderabad.
 20. Writeshop on 'Best Management Practices for Freshwater Ornamental Fish Production' held at NFDB on 27 and 28 April 2016.
 21. Review of NFDB-funded Project on Breeding and Culture of different stocks of *Fenneropenaeus indicus* for developing a Genetically Improved Strain was held on 18 August 2016 at Central Institute of Brackishwater Aquaculture (ICAR-CIBA), Chennai.
 22. NFDB funded Technology Upgradation Projects Reviewed by Experts Committee at NFDB Hyderabad on 30 August 2016.
 23. Meeting to finalize Outreach Projects on Cobia and Pompano held at NFDB on 5 August 2016.
 24. Consultative Meeting on Aquaculture Crop Insurance was held at NFDB, Hyderabad on 10 August 2016 and a follow-up meeting with representatives of Insurance Companies was held on 23 August 2016 at NFDB, Hyderabad.
 25. Consultative Meeting on 'Holistic

- Fisheries Development of Islands' held on 8 September 2016 at NFDB, Hyderabad.
26. Two-day Meeting with States & Union Territories Officials held at NFDB to finalize 'Central Sector Scheme on Blue Revolution: Integrated Development & Management of Fisheries' was convened on 26-27 July 2016 at NFDB, Hyderabad.
 27. NOS Workshop for Skill Development in Fisheries held at NFDB on 19 April 2016.
 28. Monitoring & Evaluation Survey of NFDB funded Projects in Kerala during 7-11 August 2016.
 29. Monitoring & Evaluation Survey of NFDB funded Projects in Tamil Nadu during 22-23 August 2016.

5.5.2 Central Institute of Fisheries, Nautical & Engineering Training, (CIFNET)

5.5.2.1 Advancements in deep sea fishing necessitated great demand for qualified and certified personal for manning the fishing vessels. Considering the need and importance of organized fisheries training system at national level, Central Institute of Fisheries ,Nautical &Engineering Training(CIFNET) was established in 1963 at Kochi by Ministry of Agriculture &Farmers Welfare, Government of India. Later two more units were established at Chennai and Visakhapatnam. Since its inception CIFNET is serving the nation by creating trained manpower required for manning the ocean going fishing vessels.

5.5.2.2 The Institute conducts various courses including (i) Bachelor of Fisheries Science (Nautical Science)approved and affiliated by Cochin University of Science & Technology, Kochi recognized by UGC.(ii) Two trade courses ,Vessel Navigator Course & Marine Fitter Course of duration of 2 years approved by Ministry of Labour, affiliated to National Council for Vocational Training(NCVT) and

(iii) Short term training programmes for the benefit of students from professional colleges, sister organizations, fisheries departments of the States Govt.. etc. and Extension programmes for fishermen

5.5.2.3 During the 2016-17, 78 students of BFSc(NS) and 143 trainees of VNC/MFC attended the regular courses. In addition 861 candidates were trained in various short term and extension courses. There were 6 candidates in Statutory Courses. Training Vessels of CIFNET have carried out a total of 205 fishing days there by achieving 2103 Institutional and 1947 Post Institutional trainee days. During 2016-17(till November 2016) CIFNET trained 1134 trainees involving 226 days out at sea.

5.5.2.4 During the year 2016-17, CIFNET incurred an expenditure of Rs.10.0013 Crores, as against revenue of Rs.42.287 lakh (up to November 2016)

5.5.3 National Institute of Fisheries Post Harvest Technology and Training (NIFPHATT)

5.5.3.1 During pre independence and independence era, the Indian scenario on agriculture production, fisheries and animal husbandry was very grim. All the developments for the past several decades in the above mentioned fields that have been achieved by India can very well be attributed to the programmes such as Indo-Swiz, Indo-Norwegian etc. initiated by the great visionaries of India during those days.



Fisheries infrastructure and technology were practically nil or rudimentary, at that time. The fish production in India during 1940's & 50's could in no way be comparable to that of the present day production. The artisanal level of fishing by the fishermen community was just sufficient to meet their daily subsistence. Excess catch if any could only be converted to manure or discarded. The introduction of mechanized fishing, initiated in India by the Indo-Norwegian Project (the forerunner of NIFPHATT) has opened a new chapter in the marine fish production of India. Now marine products have risen to the level of earning a major portion of foreign exchange for India.

Mechanization of fishing has brought in, other concerns such as handling of bulk fish landings. This has lead to the introduction of modern preservation methods. Acceptance of several such non conventional fish varieties and fishery products or preservation techniques by the consumers was another achievement worth mentioning.



Popularization of fishery products, importance of fish handling & preservation and spreading the message of fish as a safe and health food was another service carried out by this Institute. Now the present generation may wonder to hear that there was a time, when iced fish was considered as second grade or even semi spoiled one. Consumer's mindset was attuned to accept nothing less than freshly caught fishes.

The interior areas were forced to satisfy with dried /cured fish. Later a similar reluctance has prevailed to accept frozen fishery products for several decades. Even during eighties or early nineties, customers were much skeptic even in trying frozen varieties. Canned fishery product's case was also not different.

The customer attitudes have not changed overnight or naturally happened, but through intentional and well focused awareness programmes. NIFPHATT as a pioneer Institute in the field of fisheries in India can very well boast to have played a small but a very significant role in Indian fisheries development. The objectives of this Institute have been redefined, fine tuning to meet the requirements of the changed scenarios in the sector. Now more focus is given to product development and popularization, human resource development and gender development through tools like training programmes and consultancy services.

5.5.3.2 Business incubation centre for Promoting novel and nascent entrepreneurship in value added fish export

The first export consignment from NIFPHATT's chilled (tuna) fish plant was flagged off on 24th June 2013. The value realized from the export of fish in frozen form is almost on par with or slightly above the domestic rates, but of course prop up the foreign exchange of the nation. In order to shift the focus from frozen to chilled form NIFPHATT had set up a chilled tuna processing facility (meant for other fishes also during lean seasons) with the support of MPEDA. This plant has a water front with landing/berthing facility facing the main channel. This plant is expected to act as groundswell for similar entrepreneurship.

This facility was made available to the exporter M/s. Coral Exports on dry lease basis as promotional measure so that the private sector could take up this line of business without facing the risks associated with a nascent venture

such as high capital investments, operational costs, markets etc. Chilled fishery products are exported by air cargo and are expected to reach the market/destinations within the possible minimum time. During the period under report 222.14 tons of fish was exported by M/s. Coral Exports and fetched revenue about 10.06crores (up to 29.11.2016).

Chilled fish exported(Ton) (April 2016 to November 2016)	Value (Rs. in crores)	Importing countries
222.14	10.06	Italy, Germany, Jordan, Qatar, United Kingdom, France, Spain

5.5.3.3 Human Resource Development in Fisheries sector-NIFPHATT's role

The training programmes of NIFPHATT are spectral specific and subject specific in different disciplines of the post harvest technology and refrigeration technology. The training programmes are designed in such a way that it provides intensive hands on experience to the students who are pursuing specialized education in fisheries science, biotechnology, food science, food microbiology, food engineering and professionals working in fisheries sector. To augment the development of manpower in the fisheries and allied sectors, the Institute offer the following diversified training programmes in the various fields of fisheries post harvest technology, Refrigeration technology, Quality control and value added product development.

1. On the job training in fisheries post harvest technology for under/post graduates students from various universities.
2. Canning of sea foods
3. Training on product development from fresh water fish

4. Training on HACCP concepts
5. Short term training on value added product development
6. Training on fish filleting and freezing

During this year (up to 19th December 2016) a total of 513 students were benefited by the training programme

5.5.3.4 Contribution made to Gender development/Fishermen Community

NIFPHATT has launched its extensive fisherwomen training programme since 2000 in the national level on various capacities across 9 maritime states and two union territories. During this year 20 fisherwomen from Andhra Pradesh sponsored by TATA trust were benefited by this programme.

5.5.3.5 Participation in the exhibition and fairs

- a) 7th Krishi Fair 2016 at Sardabali, Puri, Odisha from 04/06/2016 to 08/06/2016.
- b) India International Sea Food Show 2016 at Dimond Jubilee Stadium, Visakhapatnam from 23.09.2016 to 25.09.2016.
- c) Global Rajasthan Agritech Meet 2016 (GRAM - 2016) at Jaipur, Rajasthan from 09.11.2016 to 11.11.2016.
- d) National Seminar Organized by Swadeshi Science Movement at CMFRI, Cochin from 07.11.2016 to 09.11.2016.
- e) India International Trade Fair at Pragathi Maidan, New Delhi from 14.11.2016 to 27.11.2016.
- f) World Fisheries Day organized by Department of AHDF, Ministry of Agriculture and Farmers Welfare on 26.11.2016 at New Delhi.
- g) Harithatheeram 2016 at St. Augustian's High School, Mararikulam, Alappuzha from 26.12.2016 to 29.12.2016

5.5.3.6 Performance of NIFPHATT during 2015-16 and 2016-17(up to 19.12.2016) at a glance.

Realizing the need for extending the activities of developing post harvest technologies along the upper east coast, the Govt. of India decided to set up a unit of Integrated Fisheries Project in Visakhapatnam. The Integrated Fisheries Project was renamed by the Government of India in 2008 as National Institute of Fisheries Post Harvest Technology & Training (NIFPHATT).

The current mission of NIFPHATT is to take up the new challenges and opportunities in the fisheries sector such as post harvest technology upgradation and dissemination, human resource development, gender development, relief and rehabilitation programmes for the fishermen communities and consultancies in fisheries infrastructure and post-harvest technology.

During 2015-16, the Institute has processed 131.77 tons of fish and developed 109.76 tons of various fishery products from it. NIFPHATT test marketed and popularized 87.16 tons of fish and fishery products through stalls, mobile units, exhibitions, trade fairs, dealers, contract sales etc. realized Rs. 128.46 lakhs. The Institute has imparted training to a total of 731 trainees under various disciplines with 10847 trainee days and fetched total revenue of Rs. 5.26 lakhs from it. The total revenue fetched both by HQ, Kochi and Vizag unit from all the sources was Rs. 315.47 lakhs. During 2016-17 (up to 19th December 2016), the Institute has processed 69.18 tons of fish and developed 59.75 tons of various fishery products from it. NIFPHATT test marketed and popularized 65.97 tons of fish and fishery products through stalls, mobile units, exhibitions, trade fairs, dealers, contract sales etc valued at Rs. 112.21 lakhs. The Institute has imparted training a total of 533 trainees under various disciplines with 7430 trainee days and fetched revenue of Rs. 3.53 lakhs for the period under report. The Institute has fetched a total

revenue of Rs. 190.22 (not reconciled with PAO figures) both by HQ, Kochi and Visakhapatnam unit from all sources.

Expenditure to the tune of Rs. 211.26 lakhs under Plan Head and Rs. 647.10 lakhs under Non Plan head has been incurred during the year 2015-16. During 2016-17, Rs. 677.64 lakhs was incurred on Non Plan and no funds has utilized under plan (up to 15.12.2016).

5.5.4 Fishery Survey of India (FSI)

5.5.4.1 The Fishery Survey of India (FSI) is the nodal agency for carrying out the Survey, assessment and monitoring of marine fishery resources of the Indian Exclusive Economic Zone (EEZ). The Headquarter(s) of the institute is at Mumbai and has seven Zonal Bases at Mumbai, Mormugao, Cochin, Porbandar, Chennai, Visakhapatnam and Port Blair. The survey activities are undertaken through the operations of eleven large different types of fishery resources survey vessels. The Institute, since its inception in 1946 had been operating a variety of crafts and gear to assess the suitability of the gear technology. The present survey fleet of ocean going vessels are of 24.0-40.5m OAL and are equipped with the State-of-Art, navigation and fish finding equipments. These vessels are capable of conducting the surveys like bottom trawling, mid-water trawling, tuna long lining and squid jigging for collecting the data on demersal, columnar / mid-pelagic and oceanic tunas & allied resources. The Fishery Survey of India is the designated Institute of the Govt. of India to meet the Research and Data requirement of the Indian Ocean Tuna Commission (IOTC) which is Secretariat at Seychelles. The IOTC is a regional body of the Food and Agriculture Organization for the management and conservation of the tuna and its allied resources. Recently, the FSI had submitted Statistical data and India's National Report to the Scientific Committee of IOTC for the period 2015-2016.

During the year, the Head Quarters of Fishery of

India and its Mumbai Zonal Base were shifted to the newly constructed Facility Research Centre at Plot no. 2A, Unit No. 12, New Fishing Harbour (Jetty), Sassoon Dock, Colaba, Mumbai – 400005 and have started functioning from the new premises w.e.f. July, 2016. Rs. 13 crore (approx.) was spent for construction of the Facility Research Centre.

5.5.4.2 The extension activities of the Institute for disseminating the information on survey findings for the benefit of fishers are being accomplished by organizing Regional workshops at all the maritime states of the country, Open-houses, Marine Fisheries Exhibitions and Fish festivals. Besides these, through the Publication of Bulletins, Reports, Resource Information Series (RIS), Meena news, Charts, Atlas, Occasional papers etc., and also through AIR, Doordarshan and FSI website were published for the benefit of public. FSI had organized 7 nos. of workshops at Karanja, Uran (Maharashtra),

Canacona (Goa), Albuquerque fish landing centre-Fort Kochi (Kerala), Community Hall of Pazhaverkadu (Tamil Nadu), Puri (Odisha), Kalingapatnam, Srikakulam District, (Andhra Pradesh), Beodnabad - Burmanallah, South Andaman (Port Blair), respectively during the year 2016-17.

5.5.4.3 Mumbai: The Mumbai Base of Fishery Survey of India organized one-day regional workshop on “Marine Fishery Resources off Maharashtra coast and Diversified Fishing Methods” at Karanja, Uran on 05.11.2016 for the benefit of local fishermen. During the workshop, an exhibition was also organized in the workshop venue wherein, charts on marine fishery resources, blow-up photographs of fishes, eco- friendly fishing gears and fishery slogans specially prepared in local language, Marathi were displayed. Around 100 fishermen, boat owners, representatives of Mass-media, etc attended the workshop.



5.5.4.4. Mormugao: The Mormugao Base of Fishery Survey of India organized the One-day regional workshop on “Marine Fishery Resources of Goa Coast: Sustainable Utilization for Conservation, Management



and Development” at Canacona, Goa on 02.12.2016 for the benefit of local fishermen. A total of around 172 fishermen, boat owners, representatives of Mass-media, etc., were attended the workshop.



5.5.4.5 Cochin: The Cochin Base of Fishery Survey of India organized one-day regional workshop on “Marine Fishery resources of Kerala Coast-sustainable utilization” at



Albuquerque fish landing centre, Fort Kochi on 31.10.2016 for the benefit of the local fishermen. All together 150 fishermen, boat owners etc., were attended the workshop.



5.5.4.6 Chennai: The Chennai Base of Fishery Survey of India jointly organized one-day regional workshop with Tamil Nadu State Fisheries Department on “Marine fishery Resources of Tamil Nadu coast” at Community Hall of Pazhaverkadu, Tamil Nadu on 03.11.2016. The workshop was organized to disseminate the information on survey findings on the marine fishery resources availability,



diversified fishing methods, exploitation of deep sea fishery resources, Code of Conduct for Responsible Fisheries (CCRF) and tuna fishery resources and tuna tagging with visual aids to the representative of fishermen co-operative societies and local public.

About 151 participants including native fishermen, representative of fishermen



co-operative societies from nearby villages and the officials of fisheries department were attended in the workshop.

5.5.4.7 Visakhapatnam: The Visakhapatnam Base of Fishery Survey of India organized two regional workshops on the theme “Marine Fishery Resources of the Upper east coast of India”. The first one was conducted at the Youth Hostel, Puri, Odisha on 05.08.2016 and the other at Kalingapatnam, Srikakulam, Andhra Pradesh on 06.12.2016. The workshop was organized to disseminate the information on the resources availability, diversified fishing methods, exploitation of deep sea fishery resources, Code of Conduct for Responsible Fisheries (CCRF)

and safety measure to be taken while at sea to the local fishermen and the representative of fishermen cooperative societies.

Altogether 204 participants including local fishermen, representative of fishermen co-operative societies from Odisha & Andhra Pradesh and general public attended the workshop. During the workshop an exhibition was also organized in the workshop venue wherein, charts on fishery resources, blow-up photographs of fishes etc., and eco friendly fishing gears were displayed. A street play on Code of Conduct for Responsible Fisheries (CCRF) was also organized at Bandarwaripeta, Andhra Pradesh in the regional language.



The Visakhapatnam Base of Fishery Survey of India had also participated in “Utkal - Banga Utsav -2016” at Balasore, Odisha during 21st –



25th November 2016. More than 5000 people were visited the stall exhibited by the Fishery Survey of India.



5.5.4.8 Port Blair: The Port Blair Base of Fishery Survey of India organized one-day regional workshop on “Marine fishery resources of Andaman & Nicobar Island and diversified fishing methods” on 28.09.2016 at Gram Panchayat Hall, Beodnabad, Burmanallah, South Andaman. The workshop was organized to disseminate the information on the resources potential, availability, various eco-friendly fishing methods to exploit the oceanic fishery resources, perches for optimum utilization and

for protecting the local marine habitat in and around Mayabunder.

About 90 fishermen from Beodnabad, Rutland, Burmanallah and nearby villages from South Andaman were also participated in the workshop. Besides the workshop, a Fishermen Rally was also conducted to spread the awareness among the fishermen community on Code of Conduct for Responsible Fisheries (CCRF).



5.5.4.9: In total about 867 fishermen benefited by their active participation in the workshops conducted by the Fishery Survey of India during 2016-17.

5.5.4.10 Collaborative Programmes



A. Satellite Telemetry Studies on Migration Patterns of Tunas in the Indian Seas SATTUNA Project

Fishery Survey of India in collaboration with the Indian National Center for Ocean Information

Services (INCOIS), Hyderabad has taken a five year project on Satellite telemetry Studies of tuna through pop-up telemetry tags for tuna. The objectives are to develop the baseline data base on the environmental and biological parameters influencing the tuna migration and breeding and also to develop and improve the tuna fishery forecast system with better accuracy level in predicting the probable tuna fishing grounds.

During the period Scientists from Fishery Survey of India had tagged 11 nos. of yellowfin tuna on-board the survey vessels in the Indian EEZ.

B. Remote Sensing & GIS Project

A project on Remote Sensing & GIS for Ecosystem based Marine Living Resources Management has also been taken up by the institute since 2014. The project has been

sponsored by the Space Application Centre (SAC), Dept. of Space, Govt. of India. The objective of the project is to designate marine fishery resources habitat for PFZ's exploration, management and conservation using remote sensing and GIS.

5.5.4.11 Marine Fisheries Census 2016 in the Island Groups

As per the Central Sector Scheme (CSS) on "Strengthening of Database and Geographical Information System of the Fisheries Sector", FSI has conducted the Marine Fisheries Census in Andaman & Nicobar and Lakshadweep Islands. To carry out this massive work, 59 Enumerators were engaged in the Andaman & Nicobar group of islands and 45 Enumerators were engaged in the Lakshadweep Islands. The census enumeration was carried out successfully in collaboration with the Fisheries Departments of the Union Territories of respective Islands.



5.5.4.12 Fishery survey of India participated in various regional and national programmes

1. The FSI had participated in the celebration of "World Fisheries Day" organized by the Ministry of Agriculture and Farmer's Welfare at Vigyan Bhawan, New Delhi on 21st November 2016 by encouraging the stakeholders participation in the event. The Chief Guest of the event was Shri Radha Mohan Singh, Hon'ble Minister of Agriculture and Farmer's Welfare, Government of India.
2. Participated in the meeting for capacity



building and training on Tuna Long Lining to traditional fisher folks by deploying the training vessels under the proposed deep-sea fishing vessels scheme of the DAHD&F held on 7th December 2016 at NFDB, Hyderabad under the Chairmanship of Joint Secretary (Fisheries).

3. Participated in the stakeholders meet organized by CMFRI at its Research Centre, Mumbai on "Development of fisheries management plans for sustaining marine fisheries of Maharashtra" held on 22nd April 2016.
4. Participated in the first meeting of Working

Group on Marine Oil Spill organized by the CMFRI at Kochi on 8th July 2016 for drafting the report on Marine Oil Spill and its Impact on Marine Eco System.

5. Organised a training programme for FSI



6. Participated in the policy dialogue on mainstreaming bio-diversity into fisheries sector organized by the National Biodiversity Authority, Chennai, on 25th November 2016.

7. Participated in the National Workshop on GIZ- MOAF & CC-BOBP-IGO on “Dissemination of valuation studies on coastal and marine eco-system” under the TEEB India Institute held at Chennai organized by BOBP-IGO, Chennai during 27-28th June, 2016.

8. Attended the 5th meeting of project management council (PMC) of ocean observation system SIBER and GEOTRACES held on 3rd November 2016 at Ministry of

Officials on Roster Maintenance Management during 22-23 December 2016 at FSI HQs. The training Programme was imparted by the Regional Training Institute of Govt. Accounts and Finance, Fort, Mumbai.



Environment, Forest & Climate Change, Prithvi Bhawan, New Delhi.

9. Participated in the National Seminar on “Approaches to clean and sustainable development in coastal zones of India – present status and future need”

during 25-26 August 2016 organized by NIO at NIO, Regional Centre, Mumbai.

10. FSI celebrated Swachhta Abhiyan on the eve of Mahatma Gandhi Jayanthi i.e., on 02.10.2016 and conducted Swachhta Pakhawada during 16-31 Oct, 2016. The officials of FSI along with local fishermen and stakeholders of Mumbai were actively participated in the event.



5.5.4.13 Target and Achievements of Survey vessels

During the period 2015-16 and 2016-17 (till November 2016), the survey vessels collectively had 1141 fishing days and 717 fishing days respectively, expending a total fishing effort of 2567 hours and 2158 hours and operated 292174 hooks and 118733 hooks respectively.

5.5.4.14 Expenditure (2015-16 and till December 2016)

Expenditure during 2015-16 and 2016-17 (till December 2016) are as follows:

(Rs. in Lakhs)

Particulars	2015-16	2016-17 (till December 2016)
PLAN	4212.57	106.20
NON-PLAN	1096.94	3228.32

5.5.5 Central Institute of Coastal Engineering for Fishery (CICEF), Bangalore

5.5.5.1 The Central Institute of Coastal Engineering for Fishery (CICEF), was established in January 1968 under technical and manpower assistance from the Food and Agriculture Organisation (FAO) of the United Nations Development Programme (UNDP). The main objectives of establishing this Institute were to identify potential fishery harbour sites existing all along the coastline of the Country for the development of fishery harbours, to undertake engineering and economic investigations for the selected fishery harbour site and prepare Techno-Economic Feasibility Reports (TEFR) for the development of Fishery Harbours and Fish Landing Centres, Brackish water shrimp farms and Hatchery projects.

5.5.5.2 The Institute, till end of December 2016 has carried out investigations at 94 sites and prepared project reports for 92 sites for the development of Fishery Harbours/Fish Landing Centres. This Institute has also reconnoitred about 66,200 hectares of brackish water area

and engineering investigations were carried out over 15,600 hectares in all the Maritime States and Union Territories for the development of aquaculture farms.

5.5.5.3 During 2016-17, till the end of December 2016, the Institute conducted engineering and economic investigations for development of 2nd stage fishery harbour at Tadadi in Karnataka. Further, pre-feasibility reports on potential fishery harbour sites in various maritime states/UTs of India was issued. TEFR for the development of fishery harbour at Nagapattinam in Tamil Nadu was issued.

5.5.5.4 During 2015-16 ₹300.51 lakhs were incurred by CICEF on Non Plan, while ₹278.06 lakhs have been incurred during 2016-17 (till December end). There is no allocation of funds under Plan for the Institute during 2015-16 as well as for 2016-17.

5.5.6 Coastal Aquaculture Authority (CAA)

5.5.6.1 The Coastal Aquaculture Authority was established under the Coastal Aquaculture Authority Act, 2005 for regulating activities connected with coastal aquaculture in coastal areas and for matters connected therewith or incidental thereto to ensure that coastal aquaculture does not cause any detriment to the coastal environment and the concept of responsible aquaculture is followed. Coastal aquaculture means 'culturing, under controlled conditions in ponds, pens, enclosures or otherwise, in coastal areas, of shrimp, prawn, fish or any other aquatic life in saline or brackish water; but does not include fresh water aquaculture'. Coastal area means 'area of land within a distance of two kilometers from the High Tide Line (HTL) of seas, rivers, creeks and backwaters'. The main objective of the Authority is to promote sustainable development without causing damage to the coastal environment following responsible coastal aquaculture practices and to protect the livelihood of various stakeholders living in the coastal area.

5.5.6.2 The aims and objectives of the Authority are to regulate 'coastal aquaculture' activities in the areas notified by the Central Government as 'coastal areas' and for matters connected therewith. The Authority is empowered to make regulations for the construction and operation of aquaculture farms in coastal areas, inspection of farms and hatcheries for *L. vannamei* to ascertain their environmental impact, registration of aquaculture farms and hatcheries, removal or demolition of coastal aquaculture farms which cause pollution, fixing standards for all coastal aquaculture inputs, viz., seed, feed, growth supplements, chemicals, etc., used in coastal aquaculture and for the overall monitoring and regulation of coastal aquaculture activities in the country.

5.5.6.3 The powers and functions of the Authority are specified in Chapter IV of the CAA Act, 2005, the Rules framed there under, and the Regulations framed by Coastal Aquaculture Authority, notified in March, 2008. The CAA shall inter alia make regulations for the orderly and sustainable development of the coastal aquaculture sector to facilitate environmentally responsible and socially acceptable coastal aquaculture for the socio-economic benefits of the various stakeholders involved in the activity.

5.5.6.4 The major responsibility of Coastal Aquaculture Authority towards achieving these goals is to ensure registration of all kinds of coastal, brackish and saline aquaculture farms and hatcheries engaged or to be engaged in seed production of cultivable species including shrimps, crabs, molluscs, fishes, etc., in the country within the notified area. It is mandatory for all persons carrying on coastal aquaculture to register their farms with the Coastal Aquaculture Authority, as per the procedures laid down in the Coastal Aquaculture Authority Act and Rules. Registration is valid for a period of five years, which can be renewed from time to time for a like period. The registration process would be continued in respect of existing farms, new farms as well as for farms that may

be renovated for taking up coastal aquaculture activities in future. A number of measures such as organizing awareness camps, publicity through newspapers etc., have been initiated by the Authority to ensure registration of all eligible coastal aquaculture farms.

5.5.6.5 CAA is assisted by the State Level Committees (SLC) and the District Level Committees (DLC) set up under the provision of the CAA Rules, 2005 which are the primary linkages on matters concerning the registration of coastal aquaculture farms. In the case of farms up to 2 ha water spread area, the DLC, upon satisfaction, shall recommend the applications directly to CAA for consideration of registration; and in the case of farms above 2 ha water spread area, the DLC shall inspect the farm to verify compliance of norms and recommend the applications to SLC, who upon satisfaction, shall recommend them to the CAA for registration.

5.5.6.6 Coastal Aquaculture Authority was assigned the task of regulating the commercial introduction of the exotic shrimp viz. *Litopenaeus vannamei* vide Notification dated 15th October, 2008, issued by Department of Animal Husbandry, Dairying & Fisheries, under the Livestock Importation Act, 1898. This includes granting of permission for importing broodstock of SPF *L. vannamei* from selected overseas suppliers to Indian hatcheries for seed production and its farming, after due inspection of biosecurity facilities in both hatcheries and farms by CAA Inspection Team before issuing special approvals to eligible farms and monitoring of the programmes to prevent unauthorized breeding and farming of this species etc. Accordingly, Guidelines containing the criteria for application to breed *L. vannamei*, the technical requirements, procedures for production and sale of SPF *L. vannamei* seeds and, specific norms and regulations were issued vide CAA (Amendment) Rules, 2009 and further amendments through notifications issued time to time to facilitate

implementation of the Guidelines. To facilitate smooth operations by the hatchery operators and shrimp farmers, import of SPF *L. vannamei* juveniles (up to 10 g) was permitted for rearing to adult broodstock, sale of nauplii among the permitted hatcheries, and for shifting culture of one species to another after adequate dry out period. Guidelines for seed production and culture of Specific Pathogen Free *P. monodon* have also been issued. Coastal Aquaculture Authority is monitoring the implementation of these Guidelines for the sustainable development of this venture.

5.5.6.7 Achievements of CAA from April to December, 2016:

- A total of 30,907 farms with total farm area of 50,447.63 ha (WSA 34,704.42 ha) received from SLCs/DLCs were registered since inception till December, 2016, out of which 1648 farms with total farm area of 2314.86 ha (WSA – 1601.27 ha) were registered during April to December 2016.
- A total of 4309 farms with total farm area of 8427.59 ha (WSA 5785.45 ha) were renewed since 2013 till December, 2016, out of which 2388 farms with total farm area of 3702.59 ha (WSA 2530.81 ha) were renewed during April to December, 2016.
- A total of 1,431 *L. vannamei* farms with total farm area of 11,014.96 ha (WSA 7,423.27 ha) were registered since inception (August-2009) till December, 2016, out of which 234 farms with total farm area of 474.75 ha (WSA 279.90 ha) were registered during April to December 2016.
- On the basis of the Inspection Team's report, a total of 277 SPF *L. vannamei* hatcheries and 14 Nauplii Rearing Centres (NRC) spread all over the coastal states with a production capacity of 27,030 million (including NRC)

seeds were approved / renewed from commencement of the programme till December-2016 and 6,59,000 numbers of SPF *L. vannamei* broodstock were permitted by the CAA for import till December-2016 from 10 broodstock suppliers short-listed by CAA of which 1,13,913 numbers were imported upto October, 2016.

- The concept of consortium of hatcheries introduced by the CAA facilitated import and quarantining of SPF *L. vannamei* broodstock at considerably less cost. The scheme also helped those hatcheries which have poor maturation performance to have the nauplii production done at the lead hatchery of the consortium and PL production in the partner hatcheries. Out of the 277 hatcheries approved till December 2016 (production capacity of 25,983 million), 58 hatcheries with production capacity of 5,168 million have formed 24 consortia, each one accommodating 2 to 5 numbers of small hatcheries.
- During April to December 2016, CAA monitoring team monitored 47 numbers of *L. vannamei* hatcheries (33 in East Godavari District and 14 in Prakasam District of Andhra Pradesh) during regular monitoring.
- During the period, 3480 farms with water spread area of 7,423.27 ha were approved for culture of SPF *L. vannamei* based on the Inspection Team's report. Cluster farming system introduced by CAA facilitated the farmers having small farm holdings also to take up SPF *L. vannamei* culture by having common ETS and biosecurity measures. Out of the 3480 farms registered by CAA till December 2016, 2619 numbers of small farm holdings have been registered as 570 clusters.

- L. vannamei farming started in the country during December 2009 with 107 farms with total farm area of 1,745 ha (WSA 1,117 ha) has grown steadily to 1,431 farms with total farm area of 11,014.96 ha (WSA 7,423.27 ha) till the end of 2016. SPF L. vannamei production in these farms also increased considerably with production ranging from 8.0 to 10 MT/ha/yr. The increase in productivity in L. vannamei farms impacted the overall productivity in shrimp sector as well as the export of shrimp from India.
- Wastewater samples were collected from the final discharge point of ETS of twenty three hatcheries for analysis and one sample was found to deviate from CAA standards. CAA issued warning letters to the hatchery and also directed the owners of the hatcheries to carry out modifications in their ETS to minimize the impacts of organic load.
- Strict regulation in identifying the broodstock suppliers, the import

procedures and the quarantining of the broodstock ensured that L. vannamei broodstock imported in the country so far are free of OIE listed pathogens. Similarly approval of hatcheries and farms after ensuring biosecurity facilities that are adequate and regular monitoring to ensure that the guidelines are properly implemented and wastewater quality parameters discharged from ETS of farms and hatcheries conform to the standards prescribed by CAA etc., have enabled the shrimp farming sector to avoid diseases especially the Early Mortality Syndrome (EMS), though, it has devastated shrimp farms in the neighboring South East Asian countries.

- Data base in CAA website www.caa.gov.in hosted by National Informatics Centre, Chennai is re-constructed and updated with new and latest information periodically. The new concept of Online Registration of aquafarms is progressing fast which shall be put to use after completing the required procedures.

Bio-secured farms



5.6 Issuance of Biometric Identity cards to Marine Fishers

5.6.1 In the backdrop of the terrorist attacks in Mumbai on 26th November, 2008, the Government of India felt it necessary to issue

Biometric Identity Cards to marine fishers involved in fishing and allied activities. Accordingly a “Central Sector Scheme (CSS) on Issuance of Biometric ID Cards to Marine Fishermen” at a total cost of 72 crore was

launched by the Department on 11th December, 2009. The project on issuance of Biometric ID cards involves two major activities such as (a) data collection and authentication by the respective States/UTs and (b) digitization of data, capturing of biometric details of individual fisher, production and issuance of cards. Under this scheme, the Government of India provides 100% financial assistance to the Coastal States and Union Territories(UTs), besides meeting the entire cost of consultancy. Main objective of this project is to create a National Marine Fishers Database (NMFD), which could be accessed to by all authorized agencies both in the Central and coastal States/UTs. The other objectives of this project are to empower marine fishers through issuance of application oriented biometric ID card and to eliminate duplication of different cards issued by various coastal States and UTs.

5.6.2 A consortium of three Central Public Sector Undertakings (CPSUs) led by Bharat Electronics Limited (BEL), Bangalore has been entrusted the tasks of data digitization, capturing of biometric details and other works relating to design, production and issuance of Biometric ID Cards to marine fishers. Other two members of consortium are the Electronics Corporation of India Limited (ECIL), Hyderabad and Indian Telephone Industries Limited (ITI), Bangalore.

5.6.3 Under this scheme, a sum of 33 crore has been released during 2009-2010 comprising 8 crore to the Coastal State Governments and UTs and the remaining 25 crore to the consortium of CPSUs. No funds were released during 2010-11 to 2014-15. Further, a sum of Rs.6.14 crore has been released during 2016-17.

5.6.4 Out of 19,93, 817 fishermen identified for issuance of biometric ID card, data collection & digitization in respect of all the identified fishermen have been completed. Till December, 2016 total of 16, 78, 359 ID cards were produced out of which 14, 73, 656 cards were dispatched to the States/UTs for distribution to the card

holders. The project is under implementation in all 9 coastal States and 4 UTs to cover more fishers.

5.7 National Surveillance Programme for Aquatic Animal Diseases (NSPAAD)

5.7.1 The National Surveillance Programme for Aquatic Animal Diseases (NSPAAD) was initiated in April, 2013 for the purpose of monitoring and control of spread of diseases of national and international concern, which has become a primary requirement for effective health management and ultimately for sustainable aquaculture. This programme is also aimed at providing scientifically accurate and cost-effective information for assessing and managing risks of pathogen transfer associated with trade in aquatic animals and improve production efficiency. The other objective of the Programme is rapid detection of new and exotic infectious diseases through advanced diagnostic techniques. It would also help in certifying freedom from diseases of concern within a defined geographical area or a specific population and give boost to our aquatic animal exports. Initially, the first phase of the Programme is being implemented to cover 15 selected States of aquaculture importance for five years with financial assistance through National Fisheries Development Board (NFDB). The Programme is being implemented in a network mode involving ICAR Fishery Institutes, Colleges of Fisheries, State Fisheries departments and other relevant collaborating partners.

5.7.2 Directorate of Aquatic Animal Health and Quarantine (DAAHQ)

5.7.2.1 Based on the recommendation of National Farmers' Commission to strengthen the bio-security in livestock and marine sectors, a new sub-component of setting up Aquatic Animal Quarantine Units and Disease Diagnostic Laboratories was introduced under the component of Directorate of Animal Health of the Central Sector Scheme on

Animal Quarantine and Certification Services in XI Plan. Under this sub-component, it was initially envisaged to set up one Aquatic Animal Quarantine Unit each on the East Coast (Chennai) and West Coast (Mumbai) with a coordinating unit at Head Quarter in New Delhi. It was also proposed to establish Disease Diagnostic Laboratory as an integral part of each Aquatic Animal Quarantine Unit with necessary staff and equipment. The said set up is now proposed to be established as the Directorate of Aquatic Animal Health & Quarantine (DAAHQ) in Fisheries Division of the DADF under the Central scheme on Blue Revolution.

5.8 International Cooperation in Fisheries

5.8.1 International/Regional Meetings

5.8.1.1 India is associated with various international and regional bodies dealing with fisheries such as Food and Agriculture Organisation (FAO) of the United Nations and Indian Ocean Tuna Commission (IOTC).

5.8.1.2 India is actively involved in the fisheries developmental initiatives of FAO's Committee of Fisheries (COFI) and its sub committees. The 32nd Session of Committee on Fisheries (COFI) was held during 11th -15th July, 2016 in Rome, Italy, which was attended by the Indian delegation led by Secretary (Animal Husbandry, Dairying and Fisheries) and comprising Joint Secretary (Fisheries), DADF as a member of the delegation.

5.8.1.3 Joint Secretary (Fisheries), DADF represented India at the 20th Session of Indian Ocean Tuna Commission (IOTC) held during 23rd to 27th May, 2016 at La Reunion, France.

5.8.1.4 A Regional initiative of the Bay of Bengal Programme-Inter-governmental Organization

(BOBP-IGO) is hosted by the Government of India. BOBP-IGO is mandated to enhance cooperation among member countries, other countries and organisations in the region and provide technical and management advisory services for sustainable coastal fisheries development and management in the Bay of Bengal region. India has also actively participated in the Bay of Bengal Large Marine Ecosystem (BOBLME) Programme. Fisheries issues are also actively debated in other Regional Forums such as South Asian Association for Regional Cooperation (SAARC), Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC), and Indian Ocean Rim Association (IORA) etc. of which India is a member.

5.8.2 Bilateral cooperation in the field of Fisheries

5.8.2.1 India has entered into Memoranda of Understanding (MoU) with a number of countries for bilateral cooperation in fisheries sector.

5.8.2.2 The 5th meeting of the Indo-Norwegian Joint Working Group (JWG) on cooperation on Fisheries and Aquaculture was held in New Delhi on 8th April, 2016. India-Norway joint seminar/workshops were also organized on 8th April, 2016 in New Delhi and 25th September, 2016 at Visakhapatnam.

5.8.2.3 The 3rd meeting of the Joint Working Group (JWG) between India and Bangladesh on cooperation in the field of Fisheries was held on 25th-26th October, 2016 in Dhaka, Bangladesh.

5.8.2.4 The 1st meeting of the India-Sri Lanka Joint Working Group on Fisheries has been held on 31st December, 2016 co-chaired by Secretary (Animal Husbandry, Dairying & Fisheries) on the Indian side.

Chapter 6 to 9

TRADE MATTERS SCHEDULED CASTES SUB- PLAN (SCSP) AND TRIBAL SUB-PLAN (TSP) EMPOWERMENT OF WOMEN INTERNATIONAL COOPERATION

TRADE MATTERS

6.1 Introduction

6.1.1 After the removal of Quantitative Restrictions (QRs) on various livestock products, the Department amended the Livestock Importation Act, 1898 bringing all the livestock products under its purview for the purpose of regulating their import. Accordingly, Notifications No. 655(E) dated, 7th July, 2001 for livestock products, No. 1043(E) dated 16.10.2001 for fishery products and No. 1175(E) dated 27.11.2001 for Grand Parent stock of poultry had been issued making it mandatory to import livestock products against Sanitary Import Permit (SIP). On 28.03.2008 vide Notification No. 794 (E), the Department had further amended the Notification No. 655(E) dated, 7.07.2001 whereby it had categorized the livestock products requiring Sanitary Import Permit (SIP), the products that may be cleared on the basis of No Objection from the Animal Quarantine and Certification Services and the products which require neither SIP nor No objection.

6.1.2 In the year 2014, by suppressing the principal notification S.O. 655(E) dated 7.07.2001, a consolidated notification S.O. 2666(E) dated 16.10.2014 has been issued listing out the live-stock products under Section 2(d) and procedure for import of live-stock products under Section 3A of Live-stock Importation Act 1898. The SIP is issued after conducting a risk analysis on the basis of disease situation of the exporting country vis-a-vis disease situation of this country.

6.1.3 Further, notifications had also been issued vide S.O. 1495(E) and 1496(E) dated 10th June, 2014 under Livestock Importation Act, 1898 wherein the Department has laid down the import and quarantine procedure of live animals as per Section 3 and the definition

of “Live-stock” has been further extended to number of animals as per Section 2 (d) of Live-stock Importation Act., 1898.

6.1.4 Procedure for Import: The Department has constituted a Committee on Risk Analysis under the Chairmanship of Joint Secretary (Trade) with all the Joint Secretaries as its members to consider the applications received for issuance of SIP to import various livestock products. After necessary amendment in the notification S.O. 2666 (E) dated 16.10.2014, the Department has launched the website, <https://sip.nic.in>, for online submission of SIP applications and issuance of Sanitary Import Permit to various firms/ Organizations engaged in activities of import of livestock products. The procedure for submission of on-line SIP application along with the relevant information regarding sanitary requirements is also available on Department's website www.dahd.nic.in. The SIP applications received are examined and a risk analysis is undertaken by the technical experts of the Department on the basis of scientific evidence and OIE regulations. The recommendations of the technical experts are considered by the Risk Analysis Committee for either rejecting the application or issuance of SIP. Aggrieved applicant can seek a review of the decision of the Risk Analysis Committee through filing a review / representation addressed to Joint Secretary (Trade). The meeting of the Committee is held at 10 to 15 days interval in every month. 22 meetings of the Committee have been held till December, 2016. The Trade Unit issued 3224 Sanitary Import Permits till December, 2016 to various firms/organizations to enable them to import various livestock products, including Fisheries products.

This Department also processes the proposals for import /export/manufacturing/marketing of livestock and livestock related commodities including vaccines, drugs & biological received from various State Governments /firms/ organizations. The views of the Department on these proposals are communicated to the Directorate General of Foreign Trade (DGFT) / Drugs Controller of India (DCI) for issuance of necessary import license in favour of concerned State Governments/firms/ Organizations after

considering the same by a Committee on Trade & Investment Matters. The Committee on Trade & Investment Matters also meets under the Chairmanship of Joint Secretary (Trade) with all the Joint Secretaries as its members.

The meeting of the said committee is held twice in a month. 22 meetings of the Committee were held till 31.12.2016 and 283 nos. of No Objection Certificates were issued in favour of various firms/Organizations as well as to various State Governments till December, 2016.

SCHEDULED CASTES SUB-PLAN (SCSP) AND TRIBAL SUB-PLAN (TSP)

7.1 The Department is implementing various Schemes, mainly aimed at strengthening the infrastructure of the State Governments for the development of animal husbandry, dairying & fisheries sectors. Most of the schemes are not directly beneficiary-oriented. A large population of the country belonging to the Scheduled Castes, Scheduled Tribes, other weaker sections of the society and women are engaged in activities in the livestock and fisheries sectors. As a corollary, the various schemes implemented by the Department benefit these sections of the society. However, the Department is not maintaining a record of people belonging to Scheduled Castes, Scheduled Tribes and women benefiting from these schemes. Keeping in view the nature of the schemes, the State Governments/Implementing Agencies have also not been maintaining such a record.

7.2 As per the guidelines issued by the Planning Commission vide D.O. letter No.N-11016/12(1)/ 2009-PC dated 15.12.2010 to earmark 16.2% of funds under Scheduled Castes Sub Plan (SCSP), the Department has earmarked ₹230.84 crore in 2015-16 under different schemes/programmes under SCSP component. Against this, ₹192.35 crore had incurred under different schemes in 2015-16. In the current financial year (2016-17), the Department has earmarked ₹224.05 crore, out of which ₹146.72 crore has been concurred (upto 10.01.2016) under different schemes/programmes under SCSP component.

7.3 The Department had been exempted for earmarking of funds under Tribal Sub Plan (TSP).

EMPOWERMENT OF WOMEN

8.1 Women in Animal Husbandry, Dairying & Fisheries Sector.

8.1.1 The Department does not have any specific scheme designated for empowerment of women. However, the Department has always emphasized on providing benefits to women engaged in animal husbandry, dairying & fisheries.

8.1.2 In the Animal Husbandry sector, men and women work hand in hand. Feeding the animals, milking of animals etc. mostly performed by women. However, role of both men and women are complementary in the field of animal husbandry and it is not possible to segregate the functions into specific grouping.

8.1.3 Women have been at the fore-front of dairy cooperative movement, which was initially carried under the Operation Flood Programme and later also under the Integrated Dairy Development Programme implemented by the Government.

8.1.4 In the poultry sector, the rural backyard poultry is an income supplementing scheme mostly implemented by women, priority in training should be given to women.

8.1.5 Similarly, in the scheme for conservation of breeds, the conservation of sheep, goat and small ruminants are oriented in such a way that women are being identified to take up such schemes.

8.1.6 Women are actively involved in allied fisheries activities like fish seed collection, fishing of juvenile fishes, collection of mussels, edible oysters, sea weeds, fish marketing, fish processing and product development etc. Training and micro finance are provided to encourage and organizing them into groups and capacity building which are the thrust areas for enhancing their involvement and participation in the fishery sector.

8.1.7 Schemes/Programmes implemented by the Department have been beneficial to women. All the States/Union Territories have been requested to maintain record in this regard.

8.1.8 A Gender Budget Cell is constituted in the Department with the objective of influencing and effecting a change in the Ministry's policies, programmes in a way that could tackle gender imbalances, promote gender equality and development of women. The Cell is headed by Joint Secretary (ANLM) with three members. The Department has not earmarked any specific funds for women component, it is advising States/Implementing Agencies for utilizing about 10 to 20% of funds for livestock owned by women under the existing Centrally Sponsored/ Central Sector schemes from 2013-14 onwards for Empowerment of Women. Based on the feedback received, the earmarking of funds for Empowerment of Women will be increased accordingly.

INTERNATIONAL COOPERATION

9.1 Memorandum of Understanding (MOU) signed during the year 2016:-

9.1.1 India represented by the Department of Animal Husbandry, Dairying & Fisheries, and Brazil, represented by the Brazilian Agriculture Research Corporation, Ministry of Agriculture, Livestock & Food Supply (MAPA), signed a Memorandum of Understanding on 17.10.2016 on cooperation in the fields of Zebu Cattle Genomics and Assisted Reproductive Technologies, in Goa.

9.2 International Memberships

9.2.1 The Department of Animal Husbandry, Dairying and Fisheries, is a regular member of the following International Organizations related to Animal Health and Fisheries and is paying annual membership contribution to these organizations:-

a) Office International des Epizooties

(OIE), Paris, France.

b) Indian Ocean Tuna Commission (IOTC), Seychelles - an organization under FAO.

c) Animal Production and Health Commission for the Asia and the Pacific (APHCA), Bangkok, Thailand - an organization under FAO.

d) Bay of Bengal Project/Inter Governmental Organization (BOPP-IGO) on Fisheries.

e) International Dairy Federation (IDF), Belgium.

9.3 Deputation/Trainings/Workshops abroad attended by Officers

9.3.1 During the current financial year, 37 officers were deputed abroad for attending various meetings/ seminars/ trainings etc.

TOTAL NUMBER OF LIVESTOCK AND POULTRY DURING 19TH LIVESTOCK CENSUS – 2012 – STATE-WISE

(Figs. in Thousands)

S. No	States/UTs	Cattle	Buffalo	Sheep	Goats	Pigs	Horses and ponies	Mules	Donkeys	Camel	Yaks	Mithun	Total Livestock	Total Poultry
1	Andhra Pradesh	9596	10623	26396	9071	394	5	1	13	0	0	0	56099	161334
2	Arunachal Pradesh	464	6	14	306	356	4	0	0	0	14	249	1413	2244
3	Assam	10308	435	518	6169	1636	14	0	1	1	0	0	19082	27216
4	Bihar	12232	7567	232	12154	650	49	25	21	9	0	0	32939	12748
5	Chhattisgarh	9815	1391	168	3225	439	3	1	1	1	0	0	15044	23102
6	Goa	57	32	0	13	44	0	0	0	0	0	0	146	292
7	Gujarat	9984	10386	1708	4959	4	18	0	39	30	0	0	27128	15006
8	Haryana	1808	6085	1363	369	127	37	9	3	19	0	0	9820	42821
9	Himachal Pradesh	2149	716	805	1119	5	15	23	7	0	3	1	4844	1104
10	Jammu & Kashmir	2798	739	3389	2018	2	144	37	17	1	54	0	9201	8274
11	Jharkhand	8730	1186	583	6581	962	6	4	0	0	0	0	18053	13560
12	Karnataka	9516	3471	9584	4796	305	13	1	16	0	0	0	27702	53442
13	Kerala	1329	102	1	1246	56	0	0	1	0	0	0	2735	24282
14	Madhya Pradesh	19602	8188	309	8014	175	19	7	15	3	0	0	36333	11905
15	Maharashtra	15484	5594	2580	8435	326	37	2	29	0	0	0	32489	77795
16	Manipur	264	66	11	65	277	1	0	0	0	0	10	696	2500
17	Meghalaya	896	22	20	473	543	2	0	1	0	0	0	1958	3400
18	Mizoram	35	5	1	22	245	1	0	0	0	0	3	312	1271
19	Nagaland	235	33	4	99	504	0	1	0	0	0	35	911	2178
20	Odisha	11621	726	1581	6513	280	3	6	1	1	0	0	20733	19891
21	Punjab	2428	5160	129	327	32	33	5	3	1	0	0	8117	16794
22	Rajasthan	13324	12976	9080	21666	238	38	3	81	326	0	0	57732	8024
23	Sikkim	140	1	3	113	30	511	0	0	0	4	0	802	452
24	Tamil Nadu	8814	780	4787	8143	184	5	0	9	0	0	0	22723	117349
25	Tripura	949	11	3	611	363	0	0	0	0	0	0	1936	4273
26	Uttar Pradesh	19557	30625	1354	15586	1334	152	43	57	8	0	0	68715	18668
27	Uttarakhand	2006	988	369	1367	20	16	27	2	0	0	0	4795	4642
28	West Bengal	16514	597	1076	11506	648	4	0	1	0	1	0	30348	52838
29	A & Nicobar Islands	46	8	0	65	36	0	0	0	0	0	0	155	1165
30	Chandigarh	9	14	0	1	0	0	0	0	0	0	0	24	109
31	Dadra & Nagar Haveli	42	4	0	4	0	0	0	0	0	0	0	50	86
32	Daman & Diu	2	0	0	2	0	0	0	0	0	0	0	5	28
33	Delhi	86	162	1	17	76	3	0	1	0	0	0	347	44
34	Lakshadweep	3	0	0	47	0	0	0	0	0	0	0	50	165
35	Puducherry	60	2	2	55	1	0	0	0	0	0	0	120	209
	All India	190904	108702	65069	135173	10294	625	196	319	400	77	298	512057	729209

Note: Totals may not tally due to rounding up of figures

0 negligible with respect to thousands/not reported

Source: 19th Livestock Census, Department of Animal Husbandry, Dairying & Fisheries, M/O Agriculture

Annexure

II

Production of Major Livestock Products – All India

(In '000 tonnes)

Year	Milk (Million Tonnes)	Eggs (Million Nos.)	Wool (Million Kgs.)	Meat (Million Tonnes)
1950-51	17	1,832	27.5	-
1955-56	19	1,908	27.5	-
1960-61	20	2,881	28.7	-
1968-69	21.2	5,300	29.8	-
1973-74	23.2	7,755	30.1	-
1979-80	30.4	9,523	30.9	-
1980-81	31.6	10,060	32	-
1981-82	34.3	10,876	33.1	-
1982-83	35.8	11,454	34.5	-
1983-84	38.8	12,792	36.1	-
1984-85	41.5	14,252	38	-
1985-86	44	16,128	39.1	-
1986-87	46.1	17,310	40.0	-
1987-88	46.7	17,795	40.1	-
1988-89	48.4	18,980	40.8	-
1989-90	51.4	20,204	41.7	-
1990-91	53.9	21,101	41.2	-
1991-92	55.7	21,983	41.6	-
1992-93	58	22,929	38.8	-
1993-94	60.6	24,167	39.9	-
1994-95	63	25,975	40.6	-
1995-96	66.2	27,187	42.4	-
1996-97	69.1	27,496	44.4	-
1997-98	72.1	28,689	45.6	-
1998-99	75.4	29,476	46.9	1.9
1999-2000	78.3	30,447	47.9	1.9
2000-01	80.6	36,632	48.4	1.9
2001-02	84.4	38,729	49.5	1.9
2002-03	86.2	39,823	50.5	2.1
2003-04	88.1	40,403	48.5	2.1
2004-05	92.5	45,201	44.6	2.2
2005-06	97.1	46,235	44.9	2.3
2006-07	102.6	50,663	45.1	2.3
2007-08	107.9	53,583	43.9	4.0
2008-09	112.2	55,562	42.8	4.2
2009-10	116.4	60,267	43.1	4.5
2010-11	121.8	63,024	43	4.9
2011-12	127.9	66,449	44.7	5.5
2012-13	132.4	69,731	46.1	5.9
2013-14	137.7	73,438	47.9	6.2
2014-15	146.3	78,484	48.1	6.7
2015-16	155.5	82,929	43.6	7.0

Source: State/UT Animal Husbandry Departments

Annexure

III

State-Wise Fish Production during the Period 2007-08 to 2016-17

(In '000 tonnes)

State/Union Territory	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2016-17(P)
1.Andhra Pradesh	1,010.08	1,252.78	1293.85	1368.202	1603.17	1808.08	2018.42	1978.578	2352.263
2.Arunachal Pradesh	2.83	2.88	2.65	3.150	3.30	3.71	3.62	4.00	4.050
3. Assam	190.32	200.15	218.82	227.242	228.62	254.27	266.70	282.700	294.200
4. Bihar	319.10	300.65	297.40	299.910	344.47	400.14	432.30	479.80	506.887
5. Goa	33.43	86.21	84.33	93.270	89.96	77.88	114.06	117.976	111.911
6. Gujarat	721.91	765.90	771.52	774.902	783.72	788.49	798.49	809.932	809.560
7. Haryana	67.24	76.29	100.46	96.195	106.00	111.48	105.58	111.203	111.200
8.Himachal Pradesh	7.85	7.79	7.75	7.381	8.05	8.56	9.83	10.736	11.799
9.Jammu & Kashmir	17.33	19.27	18.94	19.700	19.85	19.95	20.00	20.30	20.080
10. Karnataka	297.69	361.85	408.05	526.579	546.44	525.57	555.31	613.241	580.570
11. Kerala	667.33	865.99	663.12	681.613	693.21	679.74	708.65	726.013	727.507
12.Madhya Pradesh	63.89	68.47	66.12	56.451	75.41	85.16	96.26	109.121	115.017
13. Maharashtra	556.45	523.10	538.35	595.249	578.79	586.37	602.68	608.065	579.685
14. Manipur	18.60	18.80	19.20	20.200	22.22	24.50	28.54	30.500	32.035
15. Meghalaya	4.00	3.96	4.21	4.557	4.77	5.42	5.75	6.039	11.343
16. Mizoram	3.76	2.89	3.04	2.901	2.93	5.43	5.94	6.387	6.828
17. Nagaland	5.80	6.18	6.36	6.585	6.84	7.13	7.47	7.835	8.220
18. Orissa	349.48	374.82	370.54	386.185	381.83	410.14	413.78	469.548	521.279
19. Punjab	78.73	86.21	122.86	97.040	97.62	99.13	104.02	114.770	120.088
20. Rajasthan	25.70	24.10	26.91	28.200	47.85	55.16	35.10	46.314	42.461
21. Sikkim	0.18	0.17	0.17	0.180	0.28	0.49	0.42	0.440	.400
22. Tamil Nadu	559.36	534.17	534.17	614.809	611.49	620.40	624.30	697.612	709.16311
23.Telangana	-	-	-	-	-	-	-	268.361	236.752
24. Tripura	36.25	36.00	42.27	49.231	53.34	57.46	61.95	65.163	69.055
25.Uttar Pradesh	325.95	349.27	392.93	417.479	429.72	449.75	464.48	494.265	504.808
26. West Bengal	1,447.26	1484.00	1505.00	1443.259	1472.05	1490.02	1580.65	1617.319	1671.420
27.A&N Islands	28.68	32.49	33.19	33.921	35.26	36.62	36.95	37.177	37.325
28. Chandigarh	0.21	0.24	0.24	0.242	0.09	0.05	0.11	0.118	0.128
29.Dadra & Nagar Haveli	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.050	0.00
30.Daman & Diu	26.36	14.14	15.88	16.975	17.43	19.01	19.86	31.816	23.031
31. Delhi	0.61	0.72	0.72	0.820	0.74	0.69	0.88	0.675	0.710

State/Union Territory	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2016-17(P)
32. Lakshadweep	11.04	12.59	12.37	12.372	12.37	12.37	18.72	13.169	11.949
33. Puducherry	39.01	40.30	41.94	41.949	42.40	41.07	42.08	47.403	64.042
34. Chhattisgarh	139.37	158.70	174.24	228.207	250.70	255.61	284.96	314.164	342.299
35. Uttarakhand	3.09	3.16	3.49	3.82	3.83	3.85	3.89	3.936	4.138
36. Jharkhand	67.89	75.80	70.50	71.886	91.68	96.60	104.82	106.430	115.995
Total	7,126.83	7,616.09	7851.61	8230.71	8666.49	9040.34	9572.27	10251.158	10758.199

Source: States/ Union Territories.

Marine Fisheries Resources of India

State/Union Territory	Approx. Length of Coast Line (Kms.)	Continental Shelf ('000 Sq. Kms.)	Number of Landing Centres	Number of Fishing Villages	Number of Fishermen families	Fisherfolk population
Andhra Pradesh	974	33	353	555	163427	605428
Goa	104	10	33	39	2189	10545
Gujarat	1600	184	121	247	62231	336181
Karnataka	300	27	96	144	30713	167429
Kerala	590	40	187	222	118937	610165
Maharashtra	720	112	152	456	81492	386259
Odisha	480	26	73	813	114238	605514
Tamil Nadu	1076	41	407	573	192697	802912
West Bengal*	158	17	59	188	76981	380138
A & N Islands	1912	35	16	134	4861	22188
Daman & Diu	27	0	5	11	7374	40016
Lakshadweep	132	4	10	10	5338	34811
Puducherry	45	1	25	40	14271	54627
Total	8118	530	1537	3432	874749	4056213

*Subsequent reference to villages actually means Gram Panchayat in West Bengal

Source: Marine Fisheries Census, 2005.



Inland Water Resources of India

Sl. No	State/Uts	Rivers & Canals (kms.)	Reservoirs (Lakh Ha)	Tanks & Ponds (Lakh Ha)	Flood plain Derelict Water bodies (Lakh Ha)	Brackish Water (Lakh Ha)	Total Water Bodies (Lakh Ha)
1.	Andhra Pradesh*	11514	2.34	5.17	-	0.60	8.11
2.	Arunachal Pradesh	2000	-	2.76	0.42	-	3.18
3.	Assam	4820	0.02	0.23	1.10	-	1.35
4.	Bihar	3200	0.60	0.95	0.05	-	1.60
5.	Chhattisgarh	3573	0.84	0.63	-	-	1.47
6.	Goa	250	0.03	0.03	-	Neg.	0.06
7.	Gujarat	3865	2.43	0.71	0.12	1.00	4.26
8.	Haryana	5000	Neg.	0.10	0.10	-	0.20
9.	Himachal Pradesh	3000	0.42	0.01	-	-	0.43
10.	Jammu & Kashmir	27781	0.07	0.17	0.06	-	0.30
11.	Jharkhand	4200	0.94	0.29	-	-	1.23
12.	Karnataka	9000	4.40	2.90	-	0.10	7.40
13.	Kerala	3092	0.30	0.30	2.43	2.40	5.43
14.	Madhya Pradesh	17088	2.27	0.60	-	-	2.87
15.	Maharashtra	16000	2.99	0.72	-	0.12	3.83
16.	Manipur	3360	0.01	0.05	0.04	-	0.10
17.	Meghalaya	5600	0.08	0.02	Neg.	-	0.10
18.	Mizoram	1395	-	0.02	-	-	0.02
19.	Nagaland	1600	0.17	0.50	Neg.	-	0.67
20.	Odisha	4500	2.56	1.23	1.80	4.30	9.89
21.	Punjab	15270	Neg.	0.07	-	-	0.07
22.	Rajasthan	5290	1.20	1.80	-	-	3.00
23.	Sikkim	900	-	-	0.03	-	0.03
24.	Tamil Nadu	7420	5.70	0.56	0.07	0.60	6.93
25.	Tripura	1200	0.05	0.13	-	-	0.18
26.	Uttar Pradesh	28500	1.38	1.61	1.33	-	4.32
27.	Uttarakhand	2686	0.20	0.006	0.003	-	0.209
28.	West Bengal	2526	0.17	2.76	0.42	2.10	5.45

Sl. No	State/Uts	Rivers & Canals (kms.)	Reservoirs (Lakh Ha)	Tanks & Ponds (Lakh Ha)	Flood plain Derelict Water bodies (Lakh Ha)	Brackish Water (Lakh Ha)	Total Water Bodies (Lakh Ha)
29.	A & N Islands	-	0.00367	0.00160	-	0.33	0.33527
30.	Chandigarh	2	-	Neg.	Neg.	-	0.00
31.	Dadra and Nagar Haveli	54	0.05	-	-	-	0.05
32.	Daman and Diu	12	-	Neg.	-	Neg.	0.00
33.	Delhi	150	0.04	-	-	-	0.04
34.	Lakshadweep	-	-	-	-	-	0.00
35.	Puducherry	247	-	Neg.	0.01	Neg.	0.01
	Total	195095	29.26367	24.3276	7.983	11.55	73.12427

*including Telengana

Source: State Governments/ Union Territories.

Fish Seed Production

Year	Fish Seed (In Million Fry)
1973-74 (End of IV th Plan)	409
1978-79 (End of V th Plan)	912
1984-85 (End of VI th Plan)	5,639
VIIth Plan	
1985-86	6,322
1986-87	7,601
1987-88	8,608
1988-89	9,325
1989-90	9,691
Annual Plans	
1990-91	10,332
1991-92	12,203
VIIIth Plan	
1992-93	12,499
1993-94	14,239
1994-95	14,544
1995-96	15,007
1996-97	15,853
IXth Plan	
1997-98	15,904
1998-99	15,156
1999-2000	16,589
2000-01	15,608
2001-02	15,758
Xth Plan	
2002-03	16,333
2003-04	19,231
2004-05	20,790
2005-06	22,614
2006-07	31,688
XIth Plan	
2007-08	24,143

Year	Fish Seed (In Million Fry)
2008-09	32,177
2009-10	29,313
2010-11	34,993
2011-12	36,566
XIIth Plan	
2012-13	34,922
2013-14	41,517
2014-15	39,076
2015-16(p)	49,560

P – Provisional

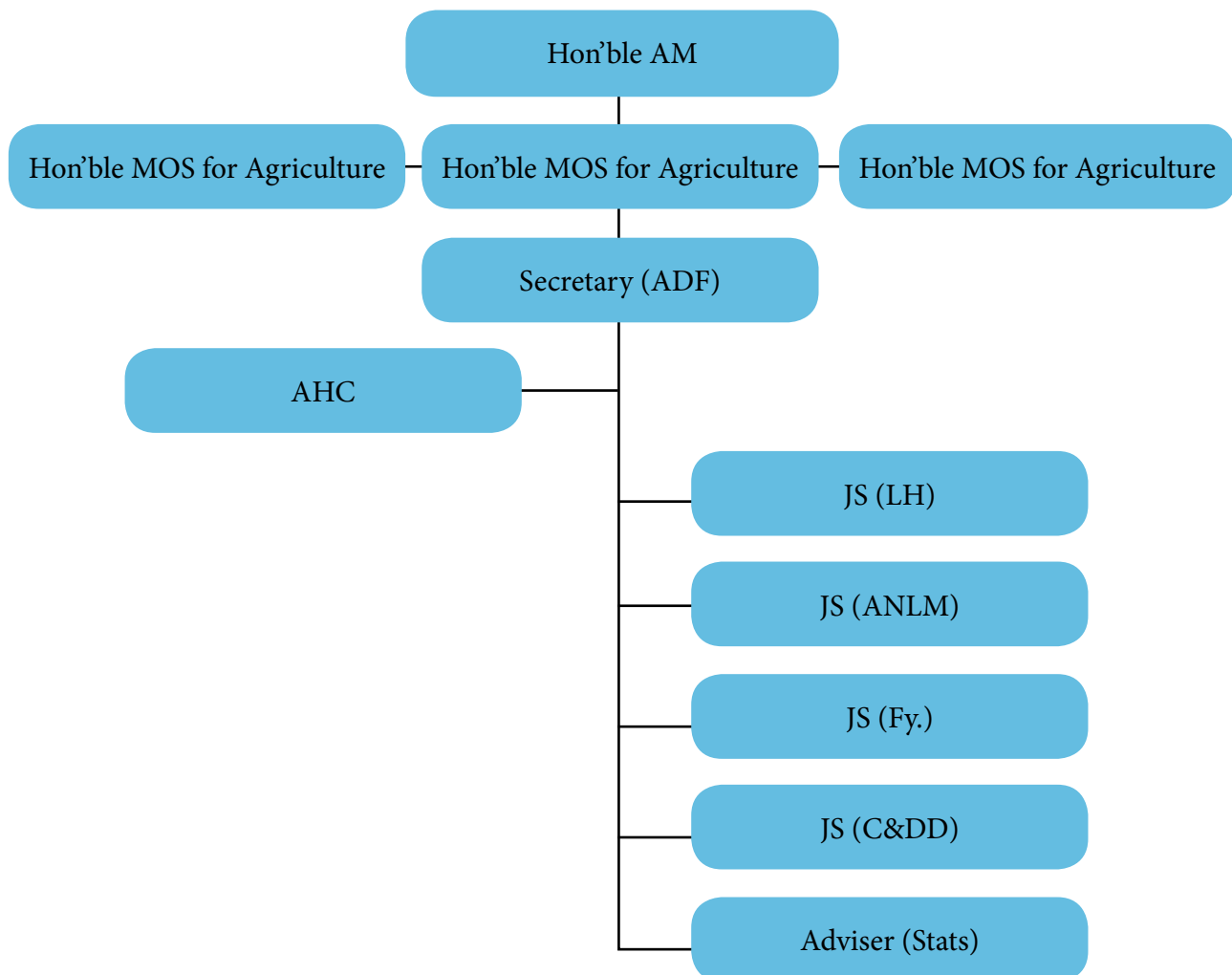
Financial Allocation and Expenditure during 2015-16 & 2016-17 (till 31.12.2016)

(₹ in crore)

Sl. No.	Name of the Scheme	2015-16			2016-17		
		BE	RE	Actual Exp.	BE	RE	Actual Exp. (upto 31.12.2016)
1	2	3	4	5	6	7	8
	Dairy Development						
1	National Project for Dairy development	74.00	78.99	73.99	110.00	120.00	67.81
2	Dairy Entrepreneurship Development Scheme	127.00	117.00	117.00	140.00	240.00	240.00
3	National Dairy Plan 1	300.00	300.00	300.00	184.00	314.32	220.00
4	Delhi Milk Scheme	5.00	1.50	1.00	-	-	-
5	National Programme for Bovine Breeding	26.00	27.97	25.85	40.00	40.00	36.73
6	Rashtriya Gokul Mission	50.00	53.92	55.92	60.00	65.00	55.52
7	National Livestock Development Board						
8	Central Cattle Development Organization	31.76	30.86	28.24	4.00	4.00	0.07
9	Supporting State Cooperative Dairy Federations		5.99		40.00	0.00	0.00
10	National Mission on Bovine Productivity					15.00	
	Sub Total	613.76	616.23	601.99	578.00	798.32	620.14
	National Livestock Mission						
10	National Livestock Mission-CSS component	106.37	104.72	100.02	292.00	250.00	202.37
11	Central Sheep Breeding Farms	0.50	1.00	0.69	4.00	0.00	0.00
12	Central Fodder Development Organization	4.29	10.00	7.60			
13	Central Poultry Development Organization	5.28	15.84	13.33			
	Sub Total	116.44	131.56	121.64	296.00	250.00	202.37
	Livestock Health & Disease Control						
14	Assistance to states for control of Animal Diseases	50.00	50.00	49.61	250.00	245.45	213.08
15	National Project on Rinderpest Surveillance and Monitoring	2.49	2.23	1.96			
16	Professional efficiency development	4.59	5.00	4.66			
17	Foot and Mouth Disease control Programme	151.38	151.39	149.73			

Sl. No.	Name of the Scheme	2015-16			2016-17		
		BE	RE	Actual Exp.	BE	RE	Actual Exp. (upto 31.12.2016)
18	Establishment / Strengthening of existing Veterinary Hospitals and Dispensaries	13.00	9.89	11.41			
19	PPR Control Programme	12.00	12.01	11.79			
20	Brucellosis Control Programme	5.85	4.30	3.11			
21	National Animal Disease Reporting System	9.32	8.00	7.52			
22	Classical Swine Fever – control program	3.00	2.00	1.64			
23	Food Safety and Traceability	0.01					
24	Directorate of Animal Health	5.63	14.49	11.49	4.00	8.00	2.0
	Sub Total	257.27	259.31	252.91	254.00	253.45	215.08
	Fisheries Scheme						
25	Strengthening of data base and Geographical information system	4.95	8.25	7.57	450.00	424.25	296.39
26	Central Institute for Fisheries Nautical and Engineering Training	10.00	13.81	10.12			
27	National Institute for fisheries post harvest Technology and Training	2.00	2.57	2.11			
28	Fishery survey of India	50.00	54.02	40.90			
29	Directorate of Aquatic Animal Health and Quarantine	2.00	1.00	0.00			
30	National Scheme for welfare of fisherman	43.49	60.00	59.51			
31	National Fishery Development Board	157.86	154.56	148.68			
32	Development of Inland Fisheries and Aquaculture	36.65	36.76	34.31			
33	Development of Marine Fisheries, infrastructure and post harvest operations	70.00	115.00	111.88			
34	Blue Revolution Inland Fisheries	100.00	10.00	0.00			
	Sub Total	476.95	455.97	415.08	450.00	424.25	296.39
35	Secretariat Economic Services	6.61	7.96	6.91	-	-	
36	Livestock Census	15.16	7.61	6.99	22.00	22.00	14.93
37	Integrated Sample Survey	4.95	12.50	12.69			
	Grand Total	1491.14	1491.14	1418.20	1600.00	1748.02	1348.90

ORGANISATIONAL CHART AND WORK ALLOCATION AMONG DIVISIONS IN THE DEPARTMENT OF ANIMAL HUSBANDRY, DAIRYING & FISHERIES



WORK ALLOCATION

JOINT SECRETARY (LH)

Livestock Health, Trade and Codex Alimentarius, National Institute of Animal Health, National Project on Rinderpest Surveillance & Monitoring, Animal Quarantine

& Certification Services, Plan & General Coordination, Matters relating to UTs without legislature, work relating to Veterinary Council of India, Public Grievances, and Administrative Reform.

JOINT SECRETARY (ANLM)

Admn. I, Cash and General Admin, International Cooperation, Vigilance, Poultry Development, Central Poultry Development Organizations, Piggery, Equine & Pack animals, Feed & Fodder, Slaughterhouses, Meat and Meat Products, Central Fodder Development Organizations, Goat, Sheep Development including Admn. Work relating to Central Sheep Breeding Farms, Official Language and Work Study Unit, Animal Husbandry Extension, Livestock Insurance Scheme.

JOINT SECRETARY (CDD)

National Dairy Plan, Dairy Development

Schemes, NPBB, Central Cattle Development Organization, Admin. IV and Estt. Matter of DMS and NDDB, and all matters related to Dairy Division.

JOINT SECRETARY (Fy)

All matters related to policy, regulation and development of Fisheries, Fisheries Institutes namely, FSI, CIFNET, NIFPHTT, CICEF and the matters related to NFDB & CAA.

ADVISER (STAT)

Livestock Census, Integrated Sample Survey and all matters related to Animal Husbandry Statistics.

LIST OF SUBJECTS ALLOCATED TO THE DEPARTMENT OF ANIMAL HUSBANDRY, DAIRYING & FISHERIES

PART - I

The following subjects falling within List I of the Seventh Schedule to the Constitution of India:-

1. Industries, the control of which by the Union is declared by Parliament by law to be expedient in public interest as far as these relate to Development of Livestock, fish and birds feed and dairy, poultry and fish products with the limitation that in regard to the development of industries, the functions of the Department of Animal Husbandry and Dairying (Pashupalan aur Dairy Vibhag) do not go further than the formulation of demand and fixation of targets.
2. Liaison and cooperation with international organizations in matters relating to livestock, poultry and fisheries development.
3. Livestock Census.
4. Livestock Statistics
5. Matters relating to loss of livestock due to natural calamities.
6. Regulation of Livestock importation, Animal Quarantine and Certification.
7. Fishing and fisheries (inland, marine and beyond territorial waters).
8. Fishery Survey of India, Mumbai.

PART - II

The following subjects falling within List III

of the Seventh Schedule to the Constitution of India: -

9. Profession of Veterinary Practice.
10. Prevention of the extension from one State to another of infectious or contagious diseases or pests affecting animals, fish, birds.
11. Conversion of indigenous breeds, introduction and maintenance of Central Herd Books for indigenous breeds of livestock.
12. Pattern of making assistance to various State Undertakings, Dairy Development Schemes through State agencies/Co-operative Unions.

PART - III

For the Union Territories the subjects mentioned in Part I and II above, so far as they exist in regard to these territories and in addition to the following subjects which fall within List II of the Seventh Schedule to the Constitution of India :-

13. Preservation, protection and improvement of stocks and prevention of diseases of animals, fish and birds, Veterinary training and practice.
14. Courts of wards.
15. Insurance of livestock, fish and birds.

PART-IV

16. Matters relating to cattle utilization and slaughter.
17. Fodder Development.

List of Attached/Subordinate Offices

I. Animal Husbandry Division

- | | |
|---|--|
| 1) Central Cattle Breeding Farm, Dhamrod, District Surat, Gujarat. | 17) Regional Fodder station, Dhamrod (Gujarat). |
| 2) Central Cattle Breeding Farm, Andesh Nagar, District Lakhimpur, (UP). | 18) Regional Fodder station, Avadi, Alamadhi, Chennai (Tamil Nadu). |
| 3) Central Cattle Breeding Farm, Similiguda, Sunabada (Koraput) Orissa. | 19) Regional Fodder station, Hyderabad. |
| 4) Central Cattle Breeding Farm, Suratgarh (Rajasthan). | 20) Regional Fodder station, Hessarghatta, Bengaluru North. |
| 5) Central Cattle Breeding Farm, Chiplima, Basantpur, District Sambalpur, (Orissa). | 21) National Institute of Animal Health, Baghpat (Uttar Pradesh). |
| 6) Central Cattle Breeding Farm, Avadi, Alamadhi (Chennai). | 22) Animal Quarantine & Certification Service Station, Kapashera Village, New Delhi. |
| 7) Central Cattle Breeding Farm, Hessarghatta, Bengaluru North. | 23) Animal Quarantine & Certification Service Station, Pallikarni Village, Chennai. |
| 8) Central Frozen Semen Production and Training Institute, Hessarghatta, Bengaluru North. | 24) Animal Quarantine & Certification Service Station, Gopalpur, District 24 Parganas (West Bengal). |
| 9) Central Herd Registration Unit, Rohtak (Haryana). | 25) Animal Quarantine & Certification Service Station, Bombay. |
| 10) Central Herd Registration Unit, Ajmer. | 26) Animal Quarantine & Certification Service Station, Hyderabad. |
| 11) Central Herd Registration Unit, Ahmedabad. | 27) Animal Quarantine & Certification Service Station, Bangalore. |
| 12) Central Herd Registration Unit, Santhapat, Ongole, District Prakasam (A.P.) | 28) Central Sheep Breeding Farm, Hissar (Haryana). |
| 13) Regional Fodder station Kalyani, District Nadia, (West Bengal). | 29) Central Poultry Development Organisation, Southern Region, Hessarghatta, Bengaluru. |
| 14) Regional Fodder station, Jammu (J&K). | 30) Central Poultry Development Organisation, Eastern Region, Bhubaneswar (Orissa). |
| 15) Regional Fodder station, Suratgarh (Rajasthan). | 31) Central Poultry Development |
| 16) Regional Fodder station Hisar (Haryana). | |

Organisation, Western Region, Aarey Milk Colony, Mumbai.

- 32) Central Poultry Development Organisation, Northern Region, Industrial Area, Chandigarh.

- 33) Central Poultry Performance Testing Centre, Gurgaon (Haryana).

II Dairy Development Division

- 34) Delhi Milk Scheme, West Patel Nagar, New Delhi.

III Fisheries Division

- 35) Central Institute of Coastal Engineering For Fishery, Bangalore

- 36) Central Institute of Fisheries Nautical and Engineering Training, Cochin.

- 37) National Institute of Fisheries Post Harvest, Technology & Training, Cochin.

- 38) Fishery Survey of India, Mumbai.

State-wise number of Veterinary Institutions (as on 31/03/2016)

S. No.	States/UTs	Veterinary Hospitals/Poly clinics	Veterinary Dispensaries	Veterinary Aid Centre (Stockmen Centers/ Mobile Dispensaries)	Total
1	Andhra Pradesh	194	1424	1548	3166
2	Arunachal Pradesh	1	93	289	383
3	Assam	29	541	767	1337
4	Bihar	39	1083	1595	2717
5	Chhattisgarh	275	795	406	1476
6	Goa	5	23	52	80
7	Gujarat	23	702	712	1437
8	Haryana	947	1813	21	2781
9	Himachal Pradesh	372	1769	1251	3392
10	Jammu & Kashmir	281	1900	668	2849
11	Jharkhand	27	424	433	884
12	Karnataka	694	1833	1688	4215
13	Kerala	277	869	20	1166
14	Madhya Pradesh	1063	1535	65	2663
15	Maharashtra	200	1746	2910	4856
16	Manipur*	55	109	34	198
17	Meghalaya	4	115	91	210
18	Mizoram	5	35	103	143
19	Nagaland	11	30	127	168
20	Odisha	541	2939	314	3794
21	Punjab	1367	1485	45	2897
22	Rajasthan	2527	198	2917	5642
23	Sikkim	17	52	63	132
24	Tamil Nadu	171	2481	931	3583
25	Telangana	110	908	1101	2119
26	Tripura	16	60	431	507
27	Uttarakhand	324	10	776	1110

28	Uttar Pradesh	2205	268	2626	5099
29	West Bengal	112	611	2659	3382
30	A & N Islands*	10	12	11	33
31	Chandigarh	5	8	-	13
32	Dadra & Nagar Haveli*	1	-	-	1
33	Daman & Diu	-	2	3	5
34	Delhi*	50	26	-	76
35	Lakshadweep*	4	5	8	17
36	Puducherry*	-	17	73	90
	TOTAL	11962	25921	24738	62621

‘-‘ Not available/not received

*Previous data used

Source : State/UT Animal Husbandry Departments

**IMPORT/EXPORT REPORT OF LIVESTOCK & LIVESTOCK
PRODUCTS OF ANIMAL QUARANTINE & CERTIFICATION
SERVICE STATIONS IN INDIA DURING THE YEAR 2016-17 W.E.F.
APRIL, 2016 TO OCTOBER, 2016**

SL. NO.	LIVE STOCK (NOS)	IMPORT	EXPORT
		PROGRESSIVE	PROGRESSIVE
1.	AQUATIC ANIMALS (PRAWN, SHRIMP, CRAB TC.)	156357	00
2.	BIRDS (WILD, DOMESTIC)	15	04
3.	BUFFALOES	13	00
4.	CAT	243	268
5.	DOG	657	996
6.	FISHES (INCLUDING ORNAMENTAL)	774410	00
7.	G.P. CHICKS INCLUDING DUCKLINGS	134456	3090
8.	HORSES/OTHER EQUIDAE	43	65
9.	LAB. ANIMAL (GUINEA PIG, RAT, MICE, RABBIT, FROG, HAMSTER ETC.)	26126	268
10.	ZOO ANIMALS (TIGER, BEAR, ELEPHANT, MONKEY ETC.)	05	00
SL. NO.	LIVESTOCK PRODUCTS (KGS., NOS., LTRS., DOSES)		
1.	ANIMAL BY- PRODUCTS (CASEIN GLUE, OX GALL, BILE ACID, OX BILE POWDER SUTURES, GOAT BEZOUR, ACIDLAC, CHOLECALCIFEROL, CHOLIC ACID, CHONDROITIN SULFATE ETC.)	248143	59932.725
2.	ANIMAL FEED (POULTRY, MICE, HORSES, CATTLE ETC.)	52052872.41	3546981.715
3.	AQUATIC BY- PRODUCTS (CORAL, SHELLS, POWDER WASTE ETC.)	629018.76	28.5
4.	BACTERIAL CULTURE (Lactobacillus, PROBIOTICS)	5803	00
5.	BONE & BONE PRODUCTS (INCLUDING CRUSHED BONES, GRIST, BUTTONS, PEARLS, HANDICRAFT ITEMS ETC.)	00	958737.5
6.	EGG/EGG POWDER	00	224190
SL. NO.	LIVE STOCK (NOS)	IMPORT	EXPORT
		PROGRESSIVE	PROGRESSIVE
7.	EGG/SEEDS OF AQUATIC ANIMALS (INCLUDING FISH)	00	00
8.	EMBRYOS (BOVINE)	00	00
9.	EMBRYOS (OVINE, CAPRINE)	00	00

SL. NO.	LIVE STOCK (NOS)	IMPORT	EXPORT
		PROGRESSIVE	PROGRESSIVE
10.	FEATHER (INCLUDING PROCESSED, SHUTTLE COCK, BRUSHES, PILLOW ETC.)	27369	49024.25
11.	FERTILIZER	572095	00
12.	FISH FEED/OIL/ PASTE (INCLUDING PRAWN FEED, SHRIMP FEED, ARTEMIA CYSTS, ETC.)	53245257.13	10241157
13.	FISH & FISH MEAT PRODUCTS (RAW, CHILLED, FROZEN, SMOKED ETC.)	7572273.767	3186657.7
14.	GELATIN / OSSEIN / GLUES (PRODUCTS, CAPSULES, SHEETS, DERIVATIVES)	1424511.28	2133927.23
15.	HATCHING EGGS (DUCK, POULTRY)	00	10913824
16.	HOOVES, HORNS, NAILS, CLAWS, BEAK & HORN CORES (PRODUCTS, DRIED MEAL, CORES, GRIST, BUTTONS, HANDICRAFT ITEMS ETC.)	32000	1528518.55
17.	LEATHER OF BOVINE, EQUINE, SHEEP, GOAT, SWINE, REPTILE ETC. (WETBLUE, FINISHED, TANNED CRUST, POWDER, FLOUR, LAMINATED ETC.)	52708675	9394755
18.	MEAT & MEAT PRODUCTS (PORK.)	379888.238	00
19.	MEAT & MEAT PRODUCTS (POULTRY.)	45590.3	25200
20.	MEAT & MEAT PRODUCTS (LAMB, GOAT)	42081.3	265405
21.	MEDICAMENTS AND DIAGNOSTICS (INCLUDING ALBUMIN, IN VITRO USE BLOOD/SERUM FRACTION, DRUG OF ANIMAL ORIGIN, HEPARIN ETC.)	241837.83	2169.99
22.	MILK & MILK PRODUCTS (CHEESE, GHEE, WHEY POWDER, CASEIN, ICE CREAM, BUTTER, YOGURT, LACTOSE OIL ETC.)	13417394	80244744
23.	MISCELLANEOUS (SILK, CHOCOLATE, HONEY ETC.)	13968	8345918
24.	PET FOOD/DOG CHEWS	14697936	3279924.48
25.	PIG / HOG / BOAR BRISTLES / HAIRS (BADGES, BRUSHES)	61557.3	9934
SL. NO.	LIVE STOCK (NOS)	IMPORT	EXPORT
		PROGRESSIVE	PROGRESSIVE
26.	RAW SKIN/HIDES OF BOVINE, EQUINE, SHEEP, GOAT, SWINE (FRESH, PICKLED, LIMED, SALTED, DRIED, PRESERVED BUT NOT TANNED)	9315303	189000
27.	RAW SKIN / OTHER PARTS OF BIRDS (WITH/WITHOUT FEATHERS)	00	00
28.	READY TO EAT ITEMS (BISCUITS, SNACKS, PROCESSED FOOD ETC.)	00	7435345.6
29.	SEMEN (DOSES) (BOVINE)	48566	57
30.	SEMEN (DOSES) (SWINE)	00	00

SL. NO.	LIVE STOCK (NOS)	IMPORT	EXPORT
		PROGRESSIVE	PROGRESSIVE
31.	SERUM (LTRS.) (BOVINE)	2747.34	00
32.	SERUM (LTRS.) (OTHER ANIMAL-SPECIFY)	66861.98	23609.854
33.	SPF EGGS (NOS.)	365160	720
34.	SWEETS	00	3183684
35.	VACCINE	18764	00
36.	WOOL / HAIRS / YARN (SHEEP, GOAT, RABBIT, HORSE)	7285348.6	344624.4

SPECIES-WISE INCIDENCE OF LIVESTOCK DISEASES IN INDIA DURING 2016 (JAN TO OCT'2016)

S. No.	Disease	Species	Jan- 2016 to Oct-2016		
			Outbreak	Attack	Death
1	Foot & Mouth Disease	Bov	108	6624	353
		Buff	12	1915	69
		O/C	9	434	0
		Swi	3	11	0
		Total	132	8984	422
2	Haemorrhagic Septicaemia	Bov	33	881	129
		Buff	8	207	37
		O/C	24	3114	849
		Total	65	4202	1015
3	Black Quarter	Bov	59	517	202
		O/C	2	2	2
		Buffalo	7	28	14
		Total	68	547	218
4	Anthrax	Bov	28	113	113
		Buf	2	14	14
		O/C	27	188	188
		Swine	1	4	4
		Total	58	319	319
5	Fascioliasis	Bov	36	1871	0
		O/C	18	1022	0
		Buff	10	449	0
		Total	64	3342	0
6	Enterotoxaemia	O/C	48	3692	1478
7.	Sheep & Goat Pox	O/C	58	1990	594
8	Blue Tongue	O/C	37	71704	8836
9	C.C.P.P.	O/C	9	838	321
10	Amphistomiasis	Bov	64	5435	0
		O/C	26	2697	0
		Buff	6	110	0
		Total	96	8242	0

S. No.	Disease	Species	Jan- 2016 to Oct-2016		
			Outbreak	Attack	Death
11	Swine Fever	Swi	22	478	70
		Bov	4	55	15
		Total	26	533	85
12	Salmonellosis	Avi	23	37178	1356
		Bov	3	2382	12
		Total	26	39560	1368
13	Coccidiosis	Bov	9	1251	76
		O/C	11	98	0
		Buff	3	9	0
		Avian	90	72112	4195
		Total	113	73470	4271
14	Ranikhet Disease	Avian	117	408198	6020
15	Fowl Pox	Avian	66	42592	238
16	Fowl Cholera	Avian	18	16060	332
17	Marek's Disease	Avian	9	75451	540
18	I.B.D.	Avian	104	771703	5604
19	Duck Plague	Avian	8	385	75
20	CRD	Avian	532	2795540	13877
		Swi	1	441	89
		Total	533	2795981	13966
21	Canine Distemper	Can	19	228	0
		Total	19	228	0
22	Rabies	Bov	10	48	48
		Can	3	20	20
		Total	13	68	68
23	Babesiosis	Bov	86	3535	0
		Buff	6	25	0
		O/C	24	294	0
		Can	3	4	0
		Total	119	3858	0
24	Mastitis	Bov	57	20466	0
		Buff	1	1	0
		O/C	15	53	0
		Total	73	20520	0
25	Trypanosomosis	Bov	16	164	18
		Buff	6	10	0
		Total	22	174	18

S. No.	Disease	Species	Jan- 2016 to Oct-2016		
			Outbreak	Attack	Death
26	Mange	Bov	14	471	0
		O/C	11	440	0
		Swi	1	14	0
		Can	8	54	0
		Total	34	979	0
27	PPR	O/C	88	6432	1705
28	Anaplasmosis	Bov	20	302	7
		O/C	4	27	0
		Buff	3	22	0
		Total	27	351	7
29	Brucellosis	Bov	4	46	0
30	Coryza	Avian	24	20351	605
31	Avian Influenza (Domestic)	Avian	33	10999	10999
32	Glanders	Equine	20	69	57

Annexure

XIV

**SPECIES-WISE INCIDENCE OF LIVESTOCK DISEASES IN
INDIA DURING 2016 (JAN TO OCT'2016)**

**NATIONAL ACTION PLAN FOR DEPARTMENT OF
ANIMAL HUSBANDRY, DAIRYING & FISHERIES**

NATIONAL ACTION PLAN FOR ORGANISED BREEDING COVERAGE OF BREEDABLE BOVINES AND INCREASE IN MILK PRODUCTION

S. No.	Type of animal	Breedable females Popn. Size (in mln)	Target size (in mln)	Heifers below 3 years of age (in mln)	Target Size (10%)(in mln)	Number to bred annually (in mln)	Semen doses (in mln)	Bulls required for AI (in Nos)	Bulls required for NS (in Nos)	Female calves born in mln	No of female calves actual (Mortality average 10%)	Av Productivity in kg/day	Milk production MMT
1	Defined indigenous breeds	2	3	4	5	6	7	8	9	10	11	12	13
1	Defined indigenous breeds	10.81	6.48	6.80	0.68	7.16	12.89	742	14327	4.12	3.71	7.74	11.64
2	AI (55%)					3.94	11.82	516		1.97	1.77	8	5.75
3	NS (30%)					2.15			14327	1.07	0.97	5	1.96
4	ART (sex sorted semen)					0.72	2.15	215		0.72	0.64	10	2.61
5	ART (IVF/MOET) 5%					0.36	0.12	12		0.36	0.32	10	1.31
6	Non descript Cattle	43.22	25.93	27.20	2.72	28.65	60.17	2934	38206	16.48	14.83	8.91	53.61
7	Upgrading(AI) 30%					8.60	25.79	1032		4.30	3.87	5	7.84
8	Upgrading (NS) (15%)					4.30			28654	2.15	1.93	5	3.92
9	Gross breeding (AI)40%					11.46	34.39	1146		5.73	5.16	10	20.92
10	ART (sex sorted semen)					2.87	8.60	716		2.87	2.58	12.5	13.09
11	ART (IVF/MOET) 5%					1.43	0.48	40		1.43	1.29	15	7.83
12	Total Indigenous cattle	54.03	32.42	34	3.40	35.82	73.06	3676	52533	20.60	18.54	8.68	65.24
14	Crossbred Interse (AI)	20.96	16.77	12.5	1.25	18.02	54.05	2162		9.01	8.11	15	13.60
15	Total Cattle	74.99	49.19	46.5	4.65	53.84	127.12	5838	57309	29.61	26.65	7.30	78.84
16	Defined Buffalo Breeds	16.64	10.99	21	2.10	13.09	41.58	942	61600	6.54	5.89	9.2	21.97
17	AI (60%)					7.85	23.55	942		3.93	3.53	10.00	14.33
18	NS (40%)					5.23			61600	2.62	2.36	8	7.64
19	Non descript Buffaloes	38.84	25.63	49	4.90	30.53	36.64	2402	122127	15.27	13.74	7.90	44.02
20	AI (40%)					12.21	36.64	2402		6.11	5.50	10.00	22.29
21	NS (60%)					18.32			122127	9.16	8.24	6.50	21.73
22	Total Buffaloes	55.48	36.62	70	7.00	43.62	60.19	3344	183727	21.81	19.63	8.29	65.99
	Total bovines	130.47	85.80	116.5	11.65	97.45	187.31	9183	241036	51.41	46.27	7.72	144.83
Note: Column no. 3: Calving interval is assumed to be 15 months in case of crossbreds, 20 months in case of indigenous cows, 18 months in case of Buffaloes													
Column No. 7: No. of semen doses required per conception is assumed to be 3 per CB & indigenous cows & buffaloes													
Column No. 8: Annual semen production by exotic and crossbred bulls is assumed to be 30000 doses per bull. For indigenous bulls semen production assumed to be 25000 doses per bull for buffalo bull semen production assumed to be 25000/bull.													
Column No.8: Coverage under Natural service assumed to be about 150/bull per year.													
5. About 30.56 million cows and 20.06 million buffaloes are proposed to be covered through AI.													
6. Present semen production 97 million doses, Shortage in semen production 90 million doses in order to cover 52% breedable bovines through AI													

NATIONAL ACTION PLAN FOR NATIONAL LIVESTOCK MISSION - 2017-18 TO 2019-20

Sr. No	Name of the Scheme(s)/ Action to be tracked	FY 2017-18				FY 2018-19				FY 2019-20			
		Budget Estimates (Projected) Rs.	Output (in terms of Physical Targets)	Measurable Outcomes	Budget Estimates (Projected) Rs.	Output (in terms of Physical Targets)	Measurable Outcomes	Budget Estimates (Projected) Rs.	Output (in terms of Physical Targets)	Budget Estimates (Projected) Rs.	Output (in terms of Physical Targets)	Measurable Outcomes	Measurable Outcomes
2	NLM (CS Component): Subordinate Offices	115cr	10000 (Demo.) 110 (Trg.) 110 (Fair) 220 Ton (Fodder) 570 (Rams) 100 (Bucks) 55000 (Poultry Birds)	Benefiting 51,100 Farmers for fodder prod, 11.00 Cr. Egg Prodn. from Local Birds, 12000 (Upgraded Sheeps) 2500 (Upgraded Go ats)	134cr	10500 (Demo.) 120 (Trg.) 120 (Fair) 240 Ton (Fodder) 590 (Rams) 110 (Bucks) 60500 (Poultry Birds)	Benefiting 53,700 Farmers for fodder prod, 12.00 Cr. Egg Prodn. from Local Birds, 12400 (Upgraded Sheeps) 2700 (Upgraded Go ats)	143cr	11,000 (Demo.) 130 (Trg.) 130 (Fair) 260 Ton (Fodder) 600 (Rams) 120 (Bucks) 66550 (Poultry Birds)	143cr	11,000 (Demo.) 130 (Trg.) 130 (Fair) 260 Ton (Fodder) 600 (Rams) 120 (Bucks) 66550 (Poultry Birds)	Benefiting 56,300 Farmers for fodder prod, 13.00 Cr. Egg Prodn. from Local Birds, 12600 (Upgraded Sheeps) 2900 (Upgraded Go ats)	Benefiting 56,300 Farmers for fodder prod, 13.00 Cr. Egg Prodn. from Local Birds, 12600 (Upgraded Sheeps) 2900 (Upgraded Go ats)
3	NLM: Central Sector Component: EDEG	321cr	1,650	Employment to 4,950 Entrepreneurs	353cr	1,815	Employment to 5,445 Entrepreneurs	388cr	2,000	388cr	2,000	Employment to 6,000 Entrepreneurs	Employment to 6,000 Entrepreneurs
4	National Livestock Mission: Centrally Sponsored Components		Animals to be provided with insurance cover (in lakh numbers): 9	Nearly 1.8 lakh farmer will be benefitted		Animals to be provided with insurance cover (in lakh numbers): 10	Nearly 2.0 lakh farmer will be benefitted		Animals to be provided with insurance cover (in lakh numbers): 12		Animals to be provided with insurance cover (in lakh numbers): 12	Nearly 2.4 lakh farmer will be benefitted	Nearly 2.4 lakh farmer will be benefitted

NATIONAL ACTION PLAN FOR LIVESTOCK HEALTH AND DISEASE CONTROL- 2016-17 TO 2020-21

National Action Plan for Establishment and Strengthening of Veterinary Hospitals & Dispensaries for 2016-17 to 2020-21

No. Of Cattle Units	No. of Existing Vet Hospitals/ Polyclinics	No. of Existing Vet Dispensaries	Total No. of Existing Veterinary Institution	No. of Vet Institutions required on the basis of population	Present gap (No. of Veterinary Institutions needed to be established)	Number of veterinary Institution required to be constructed / renovated during 2016-17 if gap to be fulfilled within 5 years	Number of veterinary Institution required to be constructed / renovated during 2017-18	Number of veterinary Institution required to be constructed / renovated during 2018-19	Number of veterinary Institution required to be constructed / renovated during 2019-20	Number of veterinary Institution required to be constructed / renovated during 2020-21	Funds to be required for construction/ renovation of veterinary hospitals during 2019-20(=no. Of vet institute required*22) Rs in lakhs)	Funds to be required for construction/ renovation of veterinary hospitals during 2020-21(=no. Of vet institute required*27.5) Rs in lakhs)
330002090	11367	26034	37401	66000	37656	7531	7531	7531	7531	21	165687.4	207109.221

National Action Plan for Professional Efficiency Development (PED) Program for the year 2016-17 to 2020-21

Target for CVE during 2016-17	2016-17		2017-18		2018-19		2019-20		2020-21	
	Total Budget (Rs in lakh)/@600/per head/day	Target for CVE	Total Budget (Rs in lakh)/@700/per head/day	Target for CVE	Total Budget (Rs in lakh)/@750/per head/day	Target for CVE	Total Budget (Rs in lakh)/@800/per head/day	Target for CVE	Total Budget (Rs in lakh)/@900/per head/day	
1140	20.52	5670	119.07	11340	255.15	8785	210.84	8570	231.39	

National Action Plan for Peste des Petitis –Control Programme for the year 2017-18 to 2020-21

Total sheep population (in thousands)	Total Goat population (in thousands)	Total S&G Population (in lakhs)	Total S&G population (in lakhs)	Physical achievement for 2017-18 (proposed vaccination in lakhs)	Central share 2017-18 (Rs in Lakhs) out of Col 6	2018-19 (Rs in Lakhs)	Physical achievement for 2018-19 (proposed vaccination in lakhs)	Central share 2018-19 (Rs in Lakhs) out of Col 9	Funds required for 2019-20 (Rs in Lakhs)	Funds required for 2020-21 (Rs in Lakhs)	Physical achievement for 2020-21 (proposed vaccination in lakhs)	Central share 2020-21 (Rs in Lakhs) out of Col 15
66092	135168	2012.6	2012.6	10063	2012.6	6037.8	3320.79	664.158	2035.4928	3320.79	664.158	2035.4928

National Action Plan for Brucellosis –Control for 2017-18 to 2020-21

Total Bovines (in lakhs)	Female calves in Lakhs	Eligible female calves (in lakhs)	Proposed vaccination coverage during 2017- 18 (in lakhs)	Funds required for 2017-2018 (Rs in lakhs)	Central Share for 2017-18 (Rs in Lakhs)	Proposed vaccination coverage during 2018- 19 (in lakhs)	Funds required for 2018-2019 (Amount in lakhs)	Central Share for 2018-19 (Rs in Lakhs)	Proposed vaccination coverage during 2019- 20 (in lakhs)	Funds required for 2019-2020 (Amount in lakhs)	Funds required for 2020-21 (Amount in lakhs)	Central Share for 2020-21 (Rs in Lakhs)
2995.14	400.78	360.702	180.351	5686.0565	3682.7036	360.702	11367.113	7226.9072	360.702		11377.11	7503.9072

National Action Plan for National Animal Disease Reporting System (NADRS) for 2017-18 to 2021-22

Year	2017 -18	2018-19	2019-20	2020-21	2021-22
Fund Requirement (Rs. in lakh)	1085	1090	1095	1101	1107

National Action Plan for Foot and Mouth Disease Control Programme (FMD-CP) for 2017-18 to 2020-21

Total amount vaccine and cost (Rs in Lakhs)	Total amount required for two rounds at six monthly intervals (Rs in Lakhs) for 2017-18	60% Central share (in Lakhs) for 2017-18	Tentative Physical achievement per round)* 2017-18 (in million)	Physical achievement for two rounds (in million) 2017-18	Total amount required for two rounds at six monthly intervals (Rs in Lakhs) for 2018-19	60% Central share (in Lakhs) for 2018-19	Physical achievement for two rounds (in million) 2018-19	Total amount required for two rounds at six monthly intervals (Rs in Lakhs) for 2019-20	60% Central share (in Lakhs) for 2019-20	Physical achievement for two rounds (in million) 2019-20	Physical achievement for two rounds (in million) 2020-21
1898254.89	76003.24	46027.94	269.45	538.9	74064.201	44598.5207	538.9	74484.24	44890.54		538.9

National Action Plan for National Programme for Rinderpest Surveillance and Monitoring System (NPRSM) for 2016-17 to 2020-21

Targetable population: 300 Million				
Population to be covered: 299604				
Year	2016-17	2017-18	2018-19	2020-21
Fund Requirement(in Lakh)	198.0	217.8	239.58	289.8918

National Action Plan for Classical Swine Fever-Control programme for 2016-17 to 2020-21

Year	Requirement of Vaccine doses (in Millions)	Funds Required (Rs. In Lakh)
2016-17	3.95	94.56
2017-18	4.35	104.02
2018-19	4.78	114.42
2019-20	5.26	125.86
2020-21	5.78	138.45

National Action Plan for Assistance to States for Control of Animal Disease(ASCAD) for 2016-17 to 2020-21

Year	Cattle & Buffaloe		Sheep & Goats, Pigs and canine		Poultry		Total	
	Doses of vaccines in lakhs	Amount	Doses of vaccines in lakhs	Amount	Doses of vaccines in lakhs	Amount	Doses of vaccines in lakhs	Amount
2016-17	2547.37	9767.56	1025.29	3563.22	1988.82	1053.21	5561.48	14383.99
2017-18	2802.11	10744.32	1127.81	3919.54	2187.70	1158.53	6117.62	15822.39
2018-19	3082.32	11818.75	1240.59	4311.50	2406.47	1274.38	6729.38	17404.63
2019-20	3390.55	13000.62	1364.65	4742.65	2647.12	1401.82	7402.32	19145.09
2020-21	3729.60	14300.00	1501.12	5216.80	2911.83	1542.00	8142.56	21059.60

Amount In Lakhs

NATIONAL ACTION PLAN FOR NATIONAL LIVESTOCK MISSION- 2017-18 TO 2019-20

NATIONAL ACTION PLAN FOR DAIRY DEVELOPMENT: 2016-17 TO 2023-24

AS IS/TO BE	POPULATION (in billion)	MILK PRON (Mn T)	PER CAPITA CONSUMPTION (Liters/Yr)	IN MILCH BOVINES (Mn)	YIELD / BOVINE	PROCUREMENT QUANTITY												TOTAL TRANSPORTATION				
						TOTAL			COOP			PVT			MPO					UO		
						QTY (LLPD)	VALUE (Rs. in crore)		QTY (LLPD)	VALUE (Rs. in crore)		QTY (LLPD)	VALUE (Rs. in crore)		QTY (LLPD)	VALUE (Rs. in crore)				QTY (LLPD)	VALUE (Rs. in crore)	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17					
2015-16	1254.0	160.4	127.8	91.8	4.6	2284.6	648.4	440.7	141.9	430.0	138.4	20.0	6.4	1404.6	361.7							
2023-24	1389.4	300.0	215.9	116.4	7.1	4931.5	2281.5	1643.8	781.8	2465.8	1172.7	150.0	71.3	671.9	255.7	4931.5	7668.3					
ADDNL/ GAP	135.4	139.6	88.1	24.6	2.4	2646.9	1633.1	1203.2	640.0	2035.8	1034.3	130.0	64.9	-732.7	-106.1	4932	7668.3					

AS IS/TO BE	PROCESSING		CHILLING		VALUE ADDED PRODUCTS			DRYING CAPACITY (MTPD)			CATTLE FEED PLANT CAPACITY (MTPD)				
	PROCESSING		CHILLING		VALUE ADDED PRODUCTS			DRYING CAPACITY (MTPD)			CATTLE FEED PLANT CAPACITY (MTPD)				
	QTY (LLPD)	COST (Rs. in crore)	QTY (LLPD)	COST (Rs. in crore)	QTY (MTPD)	COST (Rs. in crore)		TOTAL	COOP	PVT	MPO	TOTAL	COOP	PVT	MPO
	18	19	20	21	22	23		24	25	26	27	28	29	30	31
2015-16	1413.0	28259.6	759.6	3798.2	7918.1	1979.5		3057	1592	1465	0	15333	15662		
2023-24	3924.8	78496	3493.0	17464.9	20534.0	5133.5		8496	2182	6164	150	21300	18361	2699	240
ADDNL/ GAP	2511.8	50236.4	2733.4	13666.8	12615.9	3154.0		5439.0	590.0	4699.0	150.0	5967	2699	2699	240

AS IS/TO BE	MILK PRODUCERS (in lakh)					DAIRY COOPERATIVES/COLLECTION CENETERS (in lakh)				MILK SUPPLIED (in LLPD)					
	TOTAL	COOP	PVT	MPO	UO	TOTAL	COOP	PVT	MPO	UO	TOTAL	COOP	PVT	MPO	UO
	32	33	34	35	36	37	38	39	40	41	42	43	43	44	45
2015-16	800.0	155.0	50.2	3.3	591.5	3.2	1.72	1.43	0.07		2264.0	418.0	421.4	20.0	1404.6
2023-24	800.0	208.0	164.4	15.0	412.6	8.3	3.29	4.70	0.29		3987.0	1561.6	1611.0	142.5	671.9
ADDNL/ GAP	0.0	53.0	114.2	11.7	-178.9	5.1	1.6	3.3	0.2		1723.1	1143.6	1189.6	122.5	-732.7

AS IS/TO BE	INVESTMENT REQUIREMENT (Rs. in crore)					INVESTMENT REQUIREMENT (Rs. in crore)				
	TOTAL	COOP	PVT	MPO	UO	TOTAL	COOP	PVT	MPO	UO
	46	47	48	49	50	51	52	53	54	55
2015-16	534.8	549.1	1655.5	1160.0	356.2					
2023-24	1759.1	2260.7	4280.3	2853.6	331.8	127425.1	45707.1	76351.1	5366.9	
ADDNL/GAP	1224.3	1711.5	2624.9	1693.6	-24.4	127425.1	45707.1	76351.1	5366.9	

Assumption -

- C.35. 95% of the milk is supplied to market in case of cooperatives & MPO, while 98% in case of private & 100% in case of UO
- C.42, 43, 44- Income is based on milk procured and number of milk producers in that sector getting equal price except unorganised getting 80% price as compared to others

STATE-WISE ESTIMATED COST OF NATIONAL ACTION PLAN-DAIRY DEVELOPMENT

No.	State	(Cooperative)		(Private)		(Producer Company)		Grand Total	Fund Requirement (2016-17)	Scheme (2016-17)			
		Total	2016-17	Total	2016-17	Total	2016-17			NPDD	DEDS	RKVY	Rest
		Rs. In crore	Rs. In crore	Rs. In crore	Rs. In crore	Rs. In crore	Rs. In crore	(2+4+6)	(3+5+7)				
1	Assam	23.18	2.90			39.83	2.77	63.01	5.66	0.50	8.95	0.18	0.00
2	Andhra Pradesh	1962.63	245.33	5936	742.00	418.59	29.07	8317.22	1016.40	3.50	11.70	15.03	986.17
3	Arunachal Pradesh	1.56	0.20							0.50		0.01	
4	Bihar	1777.59	222.20	417.07	52.13	322.61	22.41	2517.27	296.74	13.00	10.00	13.61	260.13
5	Chhattisgarh	66.71	8.34			39.83	2.77	106.54	11.10	4.00	6.05	0.51	0.00
6	Delhi			3649.39	456.17			3649.39	456.17	0.00	0.00	0.00	456.17
7	Goa	81.38	10.17	281.52	35.19			362.90	45.36	0.00	0.10	0.62	44.64
8	Gujarat	16664.92	2083.12	956.14	119.52	1105.37	76.77	18726.43	2279.40	2.50	7.00	127.60	2142.30
9	Haryana	406.94	50.87	2520.17	315.02	163.3	11.34	3090.41	377.23	2.50	2.00	3.12	369.61
10	Himachal Pradesh	37.11	4.64	568.26	71.03	19.91	1.38	625.28	77.05	2.50	2.67	0.28	71.60
11	Jammu & Kashmir	8.45	1.06	31.28	3.91			39.73	4.97	6.00	2.60	0.06	0.00
12	Jharkhand	47.04	5.88			39.83	2.77	86.87	8.65	2.50	0.50	0.36	5.29
13	Karnataka	7552.01	944.00	505.7	63.21	406.26	28.21	8463.97	1035.43	3.00	10.50	57.82	964.11
14	Kerala	1097.92	137.24	388.92	48.62	119.48	8.30	1606.32	194.15	8.00	5.06	8.41	172.69
15	Madhya Pradesh	1137.59	142.20	4183.25	522.91	119.48	8.30	5440.32	673.40	2.50	5.06	8.71	657.13
16	Maharashtra	5132.40	641.55	16308.62	2038.58	607.39	42.18	22048.41	2722.31	3.00	10.00	39.30	2670.01
17	Manipur		0.00							0.00			
18	Mizoram	7.54	0.94					7.54	0.94	3.50	0.20	0.06	-2.82

No.	State	(Cooperative)		(Private)		(Producer Company)		Grand Total	Fund Requirement (2016-17)	Scheme (2016-17)			
		Total	2016-17	Total	2016-17	Total	2016-17			NPDD	DEDS	RKVY	Rest
		Rs. In crore	Rs. In crore	Rs. In crore	Rs. In crore	Rs. In crore	Rs. In crore	(2+4+6)	(3+5+7)				
1		2	3	4	5	6	7	8	9	10	11	12	13
19	Nagaland	9.68	1.21					9.68	1.21	1.50	1.00	0.07	0.00
20	Odisha	638.34	79.79	78.2	9.78	79.65	5.53	796.19	95.10	10.00	4.25	4.89	75.96
21	Puducherry	32.35	4.04					32.35	4.04	1.00		0.25	2.80
22	Punjab	1462.33	182.79	6807.68	850.96	385.68	26.79	8655.69	1060.54	10.00	5.75	11.20	1033.59
23	Rajasthan	3206.66	400.83	3504.46	438.06	442.52	30.73	7153.64	869.62	8.20	10.31	24.55	826.56
24	Sikkim	31.86	3.98					31.86	3.98	5.00	1.90	0.24	0.00
25	Tamil Nadu	2660.93	332.62	5514.75	689.34	322.61	22.41	8498.29	1044.36	5.50	14.30	20.37	1004.19
26	Telangana	1082.88	135.36			242.8	16.86	1325.68	152.22	2.00	5.60	8.29	136.33
27	Tripura	10.44	1.31					10.44	1.31	0.00	1.00	0.08	0.00
28	Uttarakhand	203.97	25.50			119.48	8.30	323.45	33.79	5.00	5.40	1.56	21.83
29	Uttar Pradesh	222.75	27.84	23532.33	2941.54	292.23	20.30	24047.31	2989.68	2.00	6.10	1.71	2979.88
30	West Bengal	145.17	18.15	1193.87	149.23	81.53	5.66	1420.57	173.04	2.00	2.00	1.11	167.93
	Total (All States)	45712.35	5714.04	76377.61	9547.20	5368.38	372.83	127456.77	15633.88	109.70	140.00	350.00	15046.11

BLUE REVOLUTION: INTEGRATED NATIONAL FISHERIES ACTION

PLAN: 2020

SL	Resource	Area (Lakh Ha)	PROD N (Lakh MT) 2014-15	Yield MT/Ha	SHARE %	Target PROD N (Lakh MT) 2020	% SHARE in Target Prod n	Addl Prod n (LMT)	Yield MT/Ha	% Addl Prod n	STRATEGIES			Proposed States / UT	Investment Required (Rs. In Crore)	Value of Current Prod n (2014-15) as per Col. 6 as Col. 4 (Rs in crore) *	Value of Target Prod n (2020) as per Col. 6 as per 2014-15 prices (Rs in crore)	Estimated Beneficiaries (No. in lakh)
											Methodology	Species type	Infrastructure requirement					
1		3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19

Inland Sector

1	POND AQUACULTURE		22.12	51.78	2.33	86.65	86.25	79.19	34.47	3.90	61.62	Productivity Enhancement through Technology Adoption & Provision of inputs	Quality Stocking Material including Jayanti Rohu, Amur Carp, other Carps, Pangasius, GIFT Tilapia	Adequate Brood Stock, Quality Fingerling Production, Aerators, Feed Mills, Renovation, Craft & Gear	All States	2135.38	44013	73312.50	88.48
2	Natural Wetlands & Perineal Waterlogged Area		7.43	1.63	0.22	2.53	7.43	6.82	5.7954	1.00	354.55	Integrated Development Programme	Carps, Jayanti Rohu, Amur Carp, other suitable species	Adequate Brood Stock, Quality Fingerling Production, earth works (dredging, de-weeding)	Assam, West Bengal, Bihar, U.P. Meghalaya, Manipur, Arunachal	1781.54	1389	6315.50	1.50
3	Brackish Water (including land locked Saline/ alkaline areas)		14.12 (Utilised Area- 1.55)	5.46	3.52	8.46	10.78	9.90	5.32	6.45	97.44	Area expansion	Seabass, Pompano, Mullet, Shrimps (for land locked states - sea bass and shrimp), Mud Crab	Biosecure Brood Stock, Hatcheries, Cage culture, Mud-crab hatcheries, Feed Mills	All maritime states (Gujarat, Maharashtra, Goa, Karnataka, Kerala, Tamil Nadu, AP, Odisha, Pondicherry, Andaman & Nicobars, Haryana, Punjab, WB	2454.58	16380	32340.00	8.16

4	Coldwater	Rivers, Lakes & Trout	0.37	NA	0.57	0.7344	0.67	0.3672	NA	100.00	Area expansion	Trout, Mahaseer and Carps	Hatcheries, Race-ways, Importing high quality genetically improved brooders	Himachal, J&K, Uttarakhand, Sikkim, Arunachal Pradesh	38.36	918	1836.00	0.05
5	Reservoirs	31.5	3.5	0.11	1.64	5.25	2.97	1.75	0.167	165.09	Integrated Development Programme	Pangasius and GIFT Tilapia for cage culture and IMC for stocking purposes	Brood Stock, fingerling production, Pens/Cages, Feed Mills, Allied infrastructure etc	All states with manmade reservoirs	551.70	2975	4462.50	28.92
6	Rivers & Canals	2 lac Km	0.1	0.05	0.15	0.5	0.46	0.4	25kg/km	400.00	Ranching & Conservation	Ranching of endemic species.	Fingerling Production/fish landing centers	All states	10.00	85	425.00	0.00
Marine Sector	Total (Inland)		62.84		100.00	108.92	100.00	48.10		74.51					6971.56	65760	118691.50	127.11
7	Capture	NA	35.80	NA	99.94	42.96	99.74	7.16		20.00		Natural stock		All Maritime States/ UTs	2431.60	46540	55848.00	18.75
8	Mariculture	(757 cages)	0.02271	0.00003	0.06	0.11355 (3785 cages)	0.26	0.09084	0.00003	400.00	Open Sea Cage Culture	Cobia, Sea Bass	Cages, Brood Bank, Hatcheries, Feed Mills	All maritime States/UTs	188.98	29.5230	147.62	
	Total (Marine)		35.82		100.00	43.07	100.00	7.25		20.24					2620.58	46570	55995.62	18.75
	G. Total		98.66			151.99									9592.14	112330	174687.12	145.86

ABBREVIATIONS USED

AI	Artificial Insemination
AIC	Artificial Insemination Centre
AMF	Anhydrous Milk Fat
APEDA	Agricultural and Processed Food Products Export Development Authority
APHCA	Animal Production and Health Commission for Asia and Pacific
ASCAD	Assistance to States for control of Animal Diseases
BE	Budget Estimate
BFDA	Brackishwater Fish Farmers Development Agency
BGC	Bovine Genital Campylobacteriosis
CAA	Coastal Aquaculture Authority
CADRAD	The Centre for Animal Disease Research and Diagnosis
CALF	Centre for Analysis and Learning in Livestock and Food
CBPP	Contagious Bovine Pleuro-pneumonia
CCBF	Central Cattle Breeding Farms
CCRF	Code of Conduct for Responsible Fisheries
CDDL	Central Disease Diagnostic Laboratory
CFF	Campylobacter Fetus Fetus
CFSPTI	Central Frozen Semen Production and Training Institute
CFV	Campylobacter Fetus Venerealis
CHRS	Central Herd Registration Scheme
CICEF	Central Institute of Coastal Engineering for Fishery
CIFNET	Central Institute of Fisheries, Nautical and Engineering Training
CMU	Central Monitoring Unit
CPDO	Central Poultry Development Organization

CPIO	Central Public Information Officer
CSBF	Central Sheep Breeding Farm
CSF	Classical Swine Fever
CSO	Central Statistical Office
CSS	Centrally Sponsored Scheme
CVE	Continuing Veterinary Education
DCGI	Drugs Controller General of India
DEDS	Dairy Entrepreneurship Development Scheme
DGFT	Directorate General of Foreign Trade
DMI	Directorate of Marketing and Inspection
DMS	Delhi Milk Scheme
EEZ	Exclusive Economic Zone
ESVHD	Establishment and Strengthening of existing Veterinary Hospitals and Dispensaries
ETT	Embryo Transfer Technology
FAO	Food and Agriculture Organization
FFDA	Fish Farmers Development Agency
FMD	Foot and Mouth Disease
FMD-CP	Foot & Mouth Disease Control Programme
FSI	Fishery Survey of India
FSU	First Stage Unit
GDP	Gross Domestic Product
GIS	Geographical Information System
GPS	Global Positioning System
HACCP	Hazard Analysis and Critical Control Point

IASRI	Indian Agricultural Statistics Research Institute
IBM	In Board Motor
IBR	Infectious Bovine Rhinotracheitis
IDDP	Intensive Dairy Development Programme
IGFRI	Indian Grassland and Fodder Research Institute
INAPH	Information Network for Animal Productivity and Health
IOTC	Indian Ocean Tuna Commission
ISO	International Organization for Standardization
ISS	Integrated Sample Survey
IUU	Illegal, Unregulated and Unreported
JD	John's Disease
MCS	Monitoring, Control and Surveillance
MIS	Management Information System
MLP	Major Livestock Products
MMSRT	Mobile Satellite Service Reporting Terminals
MPEDA	Marine Products Export Development Authority
MSP	Minimum Standard Protocol
NABARD	National Bank for Agriculture and Rural Development
NCVT	National Council for Vocational Training
NDDB	National Dairy Development Board
NDP	National Dairy Plan
NDRI	National Dairy Research Institute
NFDB	National Fisheries Development Board
NGC	New Generation Cooperatives
NIAH	National Institute of Animal Health

NIC	National Informatics Centre
NIFPHATT	National Institute of Fisheries, Post Harvest Technology and Training
NLDB	National Livestock Development Board
NLM	National Livestock Mission
NPBB	National Programme for Bovine Breeding
NPBB&DD	National Programme for Bovine Breeding and Dairy Development
NPCBB	National Project for Cattle and Buffalo Breeding
NPRSM	National Project on Rinderpest Surveillance and Monitoring
NSS	National Sample Survey
NSS	National Sample Survey Office
OBM	Out Board Motor
OIE	Office International Des Epizooties
ONBS	Open Nucleus Breeding System
PED	Professional Efficiency Development
PPR	Peste des Petits Ruminants
PRI	Panchayati Raj Institution
PTP	Progeny Testing Programmes
PVCF	Poultry Venture Capital Fund
QR	Quantitative Restriction
RDDL	Regional Disease Diagnostic Laboratory
RE	Revised Estimate
RFD	Result Framework Document
RGM	Rashtriya Gokul Mission
RTI	Right to Information
SHG	Self Help Group

SIA	State Implementing Agency
SIP	Sanitary Import Permit
SIQ&CMP	Strengthening Infrastructure for Quality and Clean Milk Production
SLBTC	State Livestock Breeding and Training Centre
SLCAnGR	State Level Committee on Animal Genetic Resources
SLSMC	State Level Sanctioning and Monitoring Committee
SMP	Skimmed Milk Powder
SOP	Standard Operating Procedure
SSCC	State Semen Collection Centre
SSU	Second Stage unit
TCD	Technical Committee of Direction for Improvement of Animal Husbandry Statistics
TCMPF	Tamil Nadu Co-operative Milk Producers Federations
TRQ	Tariff Rate Quota
TSU	Third stage unit
UBKV	Uttar Banga Krishi Viswa Vidyalyaya
VCI	Veterinary Council of India
VKGUY	Vishesh Krishi and Gram Udyog Yojna
VMS	Vessel Monitoring System