

## CHAPTER 7

### **Animal Husbandry, Dairying & Fisheries**

7.1 The animal production system in India is predominantly part of a mixed crop-livestock farming system vital for the security and survival of large numbers of poor people. In such systems, livestock generate income, provide employment, draught power and manure. This production system assumes special significance in the present context of sustained economic growth, rising income, increasing urbanization, changes in taste and preference that have led to dietary changes reflecting the importance of milk, meat, egg and fish. The estimated growth rates of production are about 4.6% in milk, 5.69% in meat and 4.56% in eggs. The trends in the production of milk, meat, wool, egg and fish are given below:

#### **Dairy and Livestock Production**

##### **Milk**

7.2 India continues to be the largest producer of milk in the world. Production is estimated to be around 121.8 million tonnes during 2010-11 as compared to 53.9 million tonnes in 1990-91. Per capita availability of milk at national level has increased from 176 grams per day in 1990-91 to 281 grams per day in 2010-11.

##### **Meat**

7.3 Total meat production from cattle, buffalo, sheep, goat, pig and poultry at the all India level increased from 1.5 million tonnes in 2000-01 to an estimated 4.83 million tonnes in 2010-11. Poultry meat production from commercial poultry farms were included from 2007-08 onwards.

##### **Wool**

7.4 The anticipated estimate of wool production at the national level has marginally increased to 43.13 million kg. in 2010-11 in comparison to 41.2 million kg. in 1990-91.

##### **Egg**

7.5 The total egg production for the year 2010-11 was an estimated around 61.45 billion as compared to 21.1 billion during 1990-91. As per FAOSTAT latest production data for the year 2010, India ranks 3rd in egg production in the world.

##### **Fish**

7.6 India is the second largest producer of fish in the world, contributing 5.54 percent of global production. The total fish production during 2010-11 is estimated at 8.29 million tonnes with a contribution of 5.07 million tonnes from the inland sector and 3.22 million tonnes from the marine sector. The value of output from the fisheries sector at current prices during 2009-10 was Rs. 67,913 crore which is 4.9 per cent of the total output of agriculture & allied sectors. India's marine product exports have for the first time crossed USD 2 billion. During 2010-11, the volume of fish and fish products exported was 8,13,091 tonnes worth Rs. 12,901 crore registering the highest growth rate of 10% in volume of fish exports in recent years.

7.7 Growth in fishery sub-sector is next only to poultry. The policy for fishery development emphasizes inland fisheries, particularly aquaculture in recent years, which has been instrumental in increasing production, enhancing exports and reducing the poverty of fishermen. The four components of production, nutrition, health and management in these sub-sectors are examined later.

**Table 7.1: Compound Annual Growth Rates (CAGRs) in Production of Milk, Egg, Wool and Fish at All-India Level (%)**

	1980-81 to 1989-90	1990-91 to 1999-00	2000-01 to 2009-10	1980-81 to 2009-10
Milk	5.6	4.2	4.2	4.6
Eggs	8.06	4.2	5.7	6.04
Wool	3	1.7	-1.3	1.00
Meat	-	-	3.34*	-
Fish	4.4	4.2	3.3	4.4

Note: \*CAGR for meat production is for the year 2000-01 to 2006-07. Meat production data from 2007-08 is not comparable with the previous years data as poultry meat production from commercial poultry farms was included from 2007-08 onwards.

Source: DAHD&F

7.8 India has the world's largest livestock population, accounting for about half the population of buffaloes and 1/6th of the goat population. Such a large population presents a challenge wherein existing productivity levels are sustained by application of modern science and technology, incentives and policies.

### Plan Schemes

7.9 Dairying is an important source of income for millions of rural families and has assumed as an important role in providing employment and income generating opportunities. The Government of India and state governments are making strong efforts to increase the productivity of milch animals and increase the per capita availability of milk. The Department of Animal Husbandry, Dairying and Fisheries has attempted the building up cooperative infrastructure, revitalization of sick dairy cooperative federations and extended support for creation of infrastructure for production of quality milk and milk products. Two important schemes being implemented are the Intensive Dairy Development Programme for increasing milk production and procurement and the National Project for Cattle and Buffalo Breeding for genetic upgradation of bovines. This section highlights the efforts made by the GOI through its schemes formulated to increase the production and productivity of milk, poultry, meat and fish.

### Strengthening Infrastructure for Quality & Clean Milk Production

7.10 The scheme, introduced during October, 2003 has its objective the improvement of the quality of raw milk produce at the village level by creating awareness among farmers and members. Under the scheme, there is a provision for training of farmers on good milking practices and the setting up of Bulk Milk Cooler (BMC) at Dairy Cooperative Society level.

### **Assistance to Cooperatives**

7.11 The central sector scheme started in 1999-2000, aims at revitalizing the sick dairy cooperative unions at the district level and cooperative federations at the State level. The rehabilitation plan is prepared by the National Dairy Development Board (NDDB) in consultation with the concerned State Dairy Federation and District Milk Union.

7.12 The achievements under assistance to cooperatives scheme reveal that the rehabilitation period of seven years is over with respect to 17 Milk Unions out of 37. Of these, four Unions have achieved positive net worth and six Unions are earning profits but have not yet achieved a positive net worth. The remaining seven Unions are incurring losses and their net worth is negative. Regarding the remaining 20 unions, three unions have achieved a positive net worth even before the completion of the seven-year rehabilitation period. Further one new rehabilitation project of Sangrur Milk union has been approved recently.

### **Dairy Venture Capital Fund (DVCF)/Dairy Entrepreneurship Development Scheme (DEDS)**

7.13 The Dairy/Poultry Venture Capital Fund scheme was started in December, 2004. It has been modified and renamed as the Dairy Entrepreneurship Development Scheme (DEDS) and is being implemented from September, 2010.

### **Cattle and Buffalo Breeding: Livestock Production**

7.14 At present 28 States and one Union Territory (UT) are participating in National Project for Cattle and Buffalo Breeding. The objective of this scheme is to promote genetic upgradation of bovines. Semen production in the country has increased from 22 million straws (1999-2000) to 54 million straws (2010-2011) and number of Artificial Insemination (AI) from 21.8 to 52 million per annum. Conception rate increased from 20% to 35%. The numbers of animals in milk has increased from 62 million during 2000 to 77 million during 2007. Crossbred cattle population has increased from 20 million (1997) to 34 million (2007). 21,700 breeding bulls with high genetic merit have been inducted for natural service in the areas out of the coverage of AI services. 36,000 Government stationary AI centres have been assisted and equipped to function as mobile AI centres and 21,000 private AI centres have been established for delivery of breeding services. In order to improve the quality of semen production a Minimum Standard Protocol (MSP) for semen production has been enforced at all semen stations; 49 frozen semen bull station have been strengthened as per this MSP. A central Monitoring Unit (CMU) has been constituted for evaluation of one semen stations in two years. Thirty four semen stations in the country have acquired ISO certification against 3 during 2004. MSP for progeny testing and standard operating procedures for AI technicians has also been formulated.

### **Challenges**

7.15 The challenges facing the dairy sector are given below:

- Small herd size and poor productivity
- Inadequate budgetary allocation over the years

- Lack of equity with crop production
- Inadequate availability of credit
- Poor access to organized markets deprive farmers of proper milk price
- Poor AI service net-work
- Shortage of manpower and funds
- Limited availability of quality breeding bulls
- Low acceptability of AI in buffaloes
- Disease outbreaks: mortality & morbidity
- Deficiency of vaccines and vaccination set-up
- Induction of crossbred animals in areas poor in feed resources
- Majority of grazing lands are either degraded or encroached
- Diversion of feed & fodder ingredients for industrial use

### **The Way Forward**

7.16 Continuous support to the States is essential for further genetic upgradation programmes to meet the fast increasing demand for milk in the country. There is further need to consolidate and improve the breeding infrastructure created under NPCBB, scientific programmes like Embryo Transfer Technology (ETT), Multi Ovulation Embryo Transfer Technology (MOET), Markers Assisted Selection (MAS) and development of semen sexing technology and use of sexed semen for faster propagation of elite germplasm and for increasing bovine productivity. The following policy initiatives are required to attract investment and for further development of dairy and livestock sector:

- Incentivize investment in this sector
- Increase public investment.

### **Meat and Poultry Sector**

7.17 India possesses around 141 million goats and 71.6 million sheep. In terms of population, India ranks second in the world in goats and third in sheep. Unlike the dairy sub-sector, growth in poultry production is mainly attributed to the efforts of the organized private sector, which controls over 80% of the total production in the country.

7.18 In poultry development, the following three components are funded by the Department:

(i) Assistance to State Poultry Farms

One time assistance is provided to strengthen farms in terms of hatchery, brooding and rearing houses, laying houses for birds with provision for feed mill and their quality monitoring and in-house disease diagnostic facilities and feed analysis laboratory. Till date, 228 farms have been assisted under the scheme since the inception.

## (ii) Rural Backyard Poultry Development

This component envisages supply of backyard poultry to beneficiaries from Below Poverty Line (BPL) families to enable them to gain supplementary income and nutritional support.

## (iii) Poultry Estates

Entrepreneurship skills are to be improved through an exploratory pilot project, 'Poultry Estates' in two States. It is meant primarily for educated, unemployed youth and small farmers with some margin money, for making a profitable venture out of various poultry related activities in a scientific and bio-secure cluster approach.

**Poultry Venture Capital Fund**

7.19 The scheme provides finance through NABARD for components like establishment of poultry breeding farm with low input technology birds, establishment of feed go-down, feed mill, feed analytical laboratory, marketing of poultry products, egg grading, packing and storage for export capacity, retail poultry dressing unit, egg and broiler carts for sale of poultry products and central grower unit, etc.

**Central Poultry Development Organizations & Central Poultry Performance Testing Centre**

7.20 The four centres of the Central Poultry Development Organizations are located at Chandigarh (Northern Region), Bhubaneswar (Eastern Region), Mumbai (Western Region) and Bangalore (Southern Region) while one Central Poultry Performance Testing Centre is at Gurgaon, Haryana. These centres are promoting the development of poultry through the following measures:

- Availability of quality chicks of identified low-input technology poultry stocks is ensured.
- Diversification into rearing of Duck and Turkey (Southern Region), Japanese Quail (Northern and Western region) and Guinea fowl (Eastern region).
- Training of trainers, farmers, women beneficiaries, various public and private sector poultry organizations, NGOs, Banks, Cooperatives and foreign trainees etc.
- Regular testing of various stocks available in the country to assess their performance.

**Challenges**

7.21 The challenges facing the meat and poultry sector include:

- Maize availability and cost: maize is the single most important ingredient of poultry feed, its' availability at a reasonable cost is the major problem of poultry sector.
- Diseases: Pathogenic and emerging diseases namely AI often cause heavy losses both in domestic market and international trade.
- Lack of Marketing Intelligence: There is a dire need for realistic national marketing intelligence to bridge the gap between supply and demand of poultry & poultry products.

- Human Resource Development: To meet the growing demand of sustainable and safe production there is a huge demand for trained and skilled manpower in poultry sector.
- Large size of target population to be improved in terms of productivity with application of science and technology pose a formidable challenge.
- Low level of processing and value addition in animal products.

### **The Way Forward**

7.22 The following measure are suggested to strengthen the meat and poultry sector for accelerated and sustainable growth:

- Long-term sustainable production measures have to be looked into to increase the production & quality of maize.
- Active surveillance, monitoring and control in case of any outbreaks in rapid manner.
- Network for a realistic national and global poultry database and marketing intelligence may be developed.
- Sufficient trained manpower should be developed in the existing institutions.
- With growing urbanization and increasing quality consciousness, the market for scientifically produced meat products is expected to grow rapidly. The market is growing for ready-to-eat and semi-processed meat products because of a changing socio-economic scenario and an increase in exports to neighboring countries, especially the Middle East.
- The mechanized slaughter houses produce huge quantities of offal and digesta from the slaughtered animals which could be profitably utilized for production of value added products, like Meat-cum-Bone Meal (MBM), Tallow, Bone Chips, Pet Foods and methane as a source of energy for value addition in most of the modern plants.
- There is a need to support pig rearing in order to improve sow productivity, growth rate of piglets and feed conversion efficiency.
- It is important to encourage proper utilization of by-products of livestock slaughter for higher income of livestock owners. The environmental pollution and spread of livestock diseases has to be prevented.

### **Nutrition: Fodder and Feed**

7.23 With only 2.29% of the land area of the world, India is maintaining about 10.71% of the worlds livestock. The nutritive value of feed and fodder has a significant bearing on productivity of livestock. The gap between the demand and supply of fodder is fast increasing. In order to bridge this gap, and ensure production of quality fodder, the DADF is implementing a Central Fodder Development Organization (CFDO) Scheme. This has 7 Regional Stations for Forage Production and Demonstration (RSFP&D), one Central Fodder

Seed Production Farm (CFSPF) at Hessarghatta (Karnataka) and Central Minikit Testing Programme (CMTP) for fodder crops. A modified 'Centrally Sponsored Fodder & Feed Development Scheme' is being implemented from April, 2010 for assisting the states in their efforts to augment the quantity and quality of feed and fodder.

### Challenges

7.24 The main challenges in providing adequate and quality fodder and feed include:

- While numbers of livestock are growing, but the grazing lands are gradually diminishing. The area under fodder cultivation is also limited.
- A majority of the grazing lands have either been degraded or encroached upon restricting their availability for livestock grazing.
- Due to increasing pressure on land for growing food grains, oil seeds, and pulses, adequate attention has not been given to the production of fodder crops.
- Diversified use of agriculture residues like paper industry, packaging, etc. widening the gap between the supply and demand for fodder.
- There is lack of authentic data on availability of fodder, crop residues, agro industrial by- products and feed grains (coarse cereal grains). This is required to build an actual database, on feed and fodder, to be used for more effective and realistic planning of livestock sector development.
- Current production of improved fodder seed in the country is about 40,000 metric tonnes as against the requirement of 5.4 lakh metric tonnes to be cultivated on 10.8 million ha area.
- A substantial amount of crop residues is burnt by the farmers after harvesting of main crop like wheat and paddy.
- In most of the states there are inadequate staffs to address the problems related to fodder.

### The Way Forward

7.25 The measures which can contribute to improved fodder and feed situation include the following:

- A reliable data-base is required for assisting in realistic planning.
- Supply of quality fodder and feed should be encouraged on a priority basis.
- The forest department can play a major role in augmenting fodder production in the country. The degraded forest areas, mostly under the Joint Forest Management Committees (JFMCs), can be used for assisting growth of indigenous fodder varieties of grasses, legumes, and trees under area-specific Silvi-pastoral systems.
- There is a need for undertaking an effective Extension campaign in major states for efficient utilization of crop residues, growing fodder crops, Azolla production, etc.

- Production of seeds of high yielding fodder varieties needs to be increased in the organized/cooperative sector.
- High yielding fodder varieties need to be introduced throughout the country, instead of dual purpose varieties.
- Production of condensed fodder blocks needs to be encouraged by creating an assured market, coupled with providing a transport subsidy for supply to distant areas.

## **Livestock Health**

### **Infectious Diseases**

7.26 High prevalence of various animal diseases like Foot & Mouth Disease (FMD), Peste des Petits Ruminants (PPR), Brucellosis, Classical Swine Fever and Avian Influenza is a serious impediment to growth in the livestock sector. Foot and Mouth Disease (FMD) alone leads to economic losses of more than Rs. 20,000 crore per annum (NCAP, Preliminary Report 2010). Most of these losses can be prevented through timely immunization. The Department of Animal Husbandry, Dairying & Fisheries (DADF) has initiated National Programmes for prevention and control of FMD, PPR and Brucellosis. The FMD control programme initially started in only 54 districts in 2003 has been expanded to 221 districts and will be expanded to cover the entire country in a phased manner. Similar programmes have been initiated to control PPR and Brucellosis. Shortages of vaccines and lack of proper cold chain facility are among the major hindrances to a faster implementation of these programmes.

### **Veterinary Support Services**

7.27 India has a total of 8,732 veterinary hospitals and polyclinics and 18,830 veterinary dispensaries (against the requirement of about 67,000 institutions). Most of these have poor infrastructure and equipment. Further, the technical manpower is too inadequate (only about 25,000 veterinarians in government sector against the requirement of 67,000) to support health programmes for the massive livestock population. The DADF has now initiated a programme for the “Establishment and Strengthening of existing Veterinary Hospitals and Dispensaries (ESVHD)”. There is a dire need to strengthen veterinary hospital facilities for timely diagnosis and treatment of animal diseases. Emphasis also needs to be given to strengthen art mobile veterinary services to ensure door-step veterinary support.

### **Disease Reporting**

7.28 The present system of disease reporting is slow. A computerized National Animal Disease Reporting System (NADRS) linking Taluka, Block, District and State Headquarters to a Central Disease Reporting and Monitoring Unit at the DADF in New Delhi has been initiated in 2010-11. A faster and reliable disease reporting and processing of data will help in the development of appropriate policies and intervention for disease prevention and containment.



## Challenges

7.29 the main challenges confronting the animal health sector include:

- Veterinary hospitals, dispensaries and technical manpower are inadequate.
- The disease reporting is neither timely nor complete which delays proper interventions.
- Inadequate availability of vaccines and lack of cold storage.

## The Way Forward

7.30 The following measures will strengthen the animal health sector:

- Adequate veterinary disease diagnosis, epidemiology, hospital infrastructure and manpower need to be developed.
- A strong programme for supply of sufficient veterinary vaccines is necessary.

## Fisheries Sector

7.31 Allocations made for the development of fisheries sector through the Centrally Sponsored Schemes and Central Sector Schemes are utilized for implementation of both development and welfare oriented schemes through the respective states and UTs. In addition to the allocations made through CSS and CS, assistance is provided through other flagship programmes like Rashtriya Krishi Vikas Yojana (RKVY) and the recently launched National Mission for Protein Supplements (NMPS)

### Marine Fisheries Development Scheme

7.32 During the eleventh Five Year Plan, the Marine Fisheries Development Scheme made provision for development of 12 fishing harbors and 4 fish landing centres. These were taken up for implementation while repairs to 4 Fishing Harbors (FH) were attended to, 29 units of post harvest infrastructure like ice plants, retail outlets were created; 5184 traditional crafts motorized; 3921 safety appliances provided; 40,993 KL of HSD provided to fishers with rebate; 3 deep sea resource-specific fishing vessels were promoted; introduction of 88 intermediate craft were taken up and one new private fishing harbor was funded under a Build-Transfer (BOT) package.

### Inland Fishery Development Scheme

7.33 Under the scheme, 7,91,628 ha area of fresh water and 39,750 ha area of brackish water were covered for aquaculture and 13,19,522 fish farmers were benefitted for freshwater aquaculture and 28,171 fish farmers for brackish water aquaculture.

### Fishermen Welfare Scheme

7.34 Under the scheme, funds were released for coverage of 37 lakh fishers for insurance, construction of 28,359 houses, benefit of 4 lakh fishers under Saving-cum-relief scheme and training of 28,248 fishers in various fish farming and post harvest activities.

### **Database Scheme**

7.35 Under the scheme, inland water bodies are surveyed in most of states, mapping of smaller water bodies have been completed in the State of West Bengal on a pilot basis. The Marine Fisheries Census was completed in all maritime states and islands, registration of fishing vessels of all the coastal States and UTs was initiated and development of database is under progress.

### **Challenges**

7.36 The main challenges facing the fisheries sector include:

- Shortage of quality and healthy fish seeds and other critical inputs.
- Lack of resource-specific fishing vessels and reliable resource and updated data.
- Inadequate awareness about nutritional and economic benefits of fish.
- Inadequate extension staff for fisheries and training for fishers and fisheries personnel.
- Absence of standardization and branding of fish products.

### **The Way Forward**

7.37 The following measures will help to further strengthen the fisheries sector:

- Schemes of integrated approach for enhancing inland fish production and productivity with forward and backward linkages right from production chain and input requirements like quality fish seeds and fish feeds and creation of required infrastructure for harvesting, hygienic handling, value addition and marketing of fish.
- Existing Fish Farmers Development Authority (FFDAs) would be revamped and cooperative sectors, SHGs and youths would be actively involved in intensive aquaculture activities.
- Large scale adoption of culture-based capture fisheries and cage culture in reservoirs and larger water bodies are to be taken up.
- Sustainable exploitation of marine fishery resources especially deep sea resources and enhancement of marine fish production through sea farming, mariculture, resource replenishment programme like setting up of artificial reefs.