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1. ANIMAL HUSBANDRY

Animal Husbandry is an art of breeding and rearing animals for the benefit of human society. The livestock sector has been renowned as a backbone of Indian agriculture. However animals in India have been suffering due to devastation of natural pastures, inferior quality fodders, deforestation, ever increasing competition with human for food, changing environment, changing customs, industrialisation and several other factors.

Mixed livestock Forming:
- Widely spread and highly popularised among Indian Farmers, this method actually involves agriculture and animals together as the principle of co-existence where animals are used for tillage, providing manure to agriculture and in return animals can get crop residues as feed, shelter etc.

Migratory livestock Farming:
- In this system, animals need to move in search of fodder and water. But due to devastation of natural grasslands and limited monsoon, this method of animal rearing is declining day by day.

Organised livestock:
- This is a modern method in which animals are reared and managed through scientific practice. Animals are managed in intensive or semi intensive housing and provided with balanced ration to encourage the maximum production.

Challenges:
- Land is only common resource acting as the platform for the development of human and animals. Ever increasing competition between human and animal for food is a critical challenge in animal rearing.
- The improper and unscientific management of resource like water in animal husbandry makes the increased usage of virtual water in the export market.
- The percolation of extension services regarding animal husbandry is less and negligent.
The low production potential of the indigenous varieties of animals is also an added issue.

Devastating pastures, increased climatic changes, decrease in monsoon rains also makes the animal husbandry vulnerable.

Improper awareness about the vaccination and lack of research in the diseases occurring to animals is also an another factor.

Lack of infrastructure facilities at rural areas like veterinary clinics, breeding centres.

The absence of credit facilities and insurance coverage schemes makes the farmers to show less interest towards animal rearing.

The proper quality checking and standardisation of animal products is absent.

WAY FORWARD:

i) Culling of burdening animals:

The burdening and aging animals have been creating excess burden on the natural resources. So removal of these animals will help in mitigating the fodder crisis in livestock.

ii) Licensing for animal rearing:

The animal keepers should be issued licences, so that, the population of animals can be tracked and policies can be formulated according to that.

iii) Rejuvenation of Natural Pastures and Grasslands:

Rejuvenation of overgrazed postures, provision of micro irrigation with solar energy management will surely boost up fodder production.

iv) Credit facilities:

Easy and hassle free credit facilities must be made available to farmers. Animals itself may be considered as an asset to sanction the smooth loon to farmers, provided that animals should be insured with an legal agency.

v) Ceiling of Crops breeding:

Indiscriminate and unscientific breeding practices must be stopped. As the cross bred population are prone to diseases, Ceiling must be there to check the population.

vi) Supply of Feed:

The licenced animal rearer must be granted an animal ration card. The concentrated feed must be available to them at subsidised rate.

vii) Animal Health Cards:

Recently GOI launched “Nakul Swasthya Patra” / animal Health cards. To avoid complications this must be maintained by every licensed animal owner.

viii) Rigorous veterinary Extension services:

Improved skills and latest technological interventions for animal management should reach the farmers door step easily.

ix) Research in organic livestock Farming:

The methods for organic livestock farming must be devised and the animal husbandry industry should move on that scale for future generation to be healthy and disease free.

x) Special Economic zones:

The special economic zone for animal husbandry with common facilities must be created for greater export potential.
2. ENHANCING MILK PRODUCTIVITY & QUALITY IN INDIA

- Milk is a lacteal secretion obtained by complete milking of one or more healthy milch animals. India as the leading global milk producer needs to ensure, the availability of clean, pure and nutritious milk to all citizens, attractive returns to milk producers and an efficient and well functioning dairy chain, be it in matters of production, processing or marketing for the above to be achieved there should be a focus on following aspects”.

i) Equal status:
   - The diary farming must be given equal status with respect to agriculture. The village level milk producing units must be brought under the organised sector.

ii) Data Base Creation:
   - India should develop a system to compete with developed countries where every milch animal is tagged with a number and every drop of milk processed, value added, marketed and instantly recorded.

iii) Safety standards:
   - The rigorous safety standards must be devised and implemented in accordance with global level to promote exports.

iv) Milk production environment:
   - The environment under which milk is produced, collected, transported, processed and distributed should be fully conducive and that animal rearing processes must be related to sanitation, which must ensure quality of milk.

v) organised sector:
   - The organised diary sector will have to progressively and systematically planned to increase the coverage so that best quality milk can be available at better prices.

vi) Strength to co-operatives:
   - The co-operatives must be strengthened and expanded. The need to nurture dairy entrepreneurs through effective training of rural youths at village level can be easily achieved by these co-operatives.

vii) Cross breeding:
   - An organised effort to conserve and propagate elite germ plasm from nucleus breeding herds will facilitate poor formers to rear desi cattle more economically.

viii) Feed management:
   - Application of technology to produce large scale feed blocks, feed enzymes and other innovative feed resources needs to be deployed for enhancing quality of milk.

ix) Veterinary Services:
   - An authentic, updated database for disease is required for identification, onward prevention and control. Infrastructure of vaccine and diagnostic, production units must be increased to address the need of cattle population.

x) Market access:
   - The provision of better market access will result in better and remunerative prices which will be helpful in alleviating poverty in rural poor and most vulnerable families and promote sustainable livelihood.
**Export:**

- The specific countries for export must be identified and trade policies must be signed between those countries inorder to boost the exports.

**3. POULTRY DEVELOPMENT IN RURAL INDIA**

Poultry is one of the fastest growing segments of agricultural sector in India today. India is now the worlds’ 3rd largest egg producer and the 5th largest producer of broiler.

![Poultry Diagram]

**Opportunities and strengths:**

- Government policies relating to investments in poultry and related industries, taxation, import duties, excise duties are favourable.
- Fresh, chilled chicken availability in every form from whole, cut-ups, deboned or processed, egg powder are in much increasing in demand.
- Increase in income generation in the rural poor and marginal farmers.
- Consumer awareness and acceptability of eggs and chicken as good and cheap source of protein and healthy food is increasing.

- Many countries, which are non - traditional poultry growers are giving incentives to their poultry industry thus global demand is increasing.
- Better availability of feeds and better marketing network also promotes this industry.
- Inclusion of eggs in the government schemes like mid day meals also promote this industry.
- Concept of organic chicken - as in India, chicken is traditionally raised in backyards and is called “Free range birds” is growing.

**Challenges:**

- Poor infrastructure for export and not meeting of international food safety standards is hindering the export of poultry products.
- Competition from international players on opening up duty free imports, lifting of free trade barriers.
- Increasing propaganda and demonstrations by organisations on promoting vegetarianism and animal rights.
- Occurrence of diseases like salmonella and other diseases in poultry meat.
- Many countries are dumping their poultry products i.e exporting eggs of prices lower than population cost.
- The increase in the price of raw materials like feeds to the poultry tend to increase the price of eggs and meat which makes the market an uncompetitive.
4. BEE KEEPING

Bee keeping is an agro based activity which is being undertaken by farmers/landless labours in rural areas as the integrated farming practice. Beekeeping supplements income generation and nutritional intake of rural population.

At present there are about 30 lakhs bee colonies in India. With estimated annual production of around 89000 metric tonnes of Honey. India produces two kinds of Honey viz.

- apiary honey - collected from domesticated bees.
- squeezed honey - collected from wild bees.

**Benefits:**

- Bees are excellent pollinating agents. According to the scientists, honey bees can increase the yield by 15-20%. Thus by promoting sustainable and eco friendly agriculture.
- Honey bees produces products like Honey, Bee wax, Bee venom, Royal jelly, propolis, Hive products which generates huge income and better employment.
- Unemployed youths can start this business with minimal funds and it serves as diversification of income for other farmers.
- Proper utilisation of natural resources is done in bee keeping process.
- Helps in rural development, poverty alleviation and promotes small village industry.
- Promotes and conserves biodiversity.

**Challenges:**

- Lack of awareness, infrastructure at root level, and national level for bee keeping industries.
- Poor quality control of honey and other bee hive products.
- Absence of institutional support like extension service guidances, bank loans etc.
- More emphasis on honey than other bee hive products.
- Absence of scientific management of the bee keeping industry.
- Mostly illiterate rural and tribal people and involved.
- Flowering of plants, nectar secretion is influenced by the climatic conditions.
- Behaviour of honey bees depend on climatic conditions and vary from place of place.
- Deforestation, air & water pollution, indiscriminate usage of insecticides, mono culture of cropping pattern like practices also pose a grave threat to bee keeping industry.

5. BLUE REVOLUTION

Fisheries in India are very important economic activity and a flourishing sector with varied resource and potential. By seeing this potential P.M. Modi named the revolution as Neel Kranti Mission (Blue revolution) with the vision to improve and sustainable maintenance of fisheries industry.
**Objectives:**

- To fully tap the total fish potential of the country both in inland and the marine sector and triple the production by 2020.
- To transform the fisheries sector as a modern industry with special forms on new technology and process.
- To double the income of the fishers and fish farmers.
- To ensure inclusive participation of the fishers and fish farmers in the income enhancement.
- To triple the export earnings by 2020 from fisheries sector.
- To enhance the food and nutritional security of the country.
- The ministry rolled out an umbrella scheme called “Blue revolution: Integrated Development and management of Fisheries” with an total outlay of 3000 cores with seven components.
- The scheme provides the convergence of,
  - Sagarmala Project
  - MGNREGA
  - Rashtriya Krishi Vikas Yojana
  - NRLM