Policy on livestock development in Indonesia

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Introduction

Indonesia is one of the countries in Asia with an agricultural base. It consists of more than 17,500 islands, extending along 5110 km from east to west and 1888 km from north to south. The country covers a land area of 1.9 million km^2. Indonesia has 27 provinces, 243 districts, 62 municipalities, 3625 subdistricts, and about 65,852 villages. The human population is about 201 million, 63% of whom live in rural areas. About 54% of the labour force is engaged in agriculture.

Agriculture (forestry, food crops, fisheries, estate crops, and livestock) is the most important sector of the Indonesian economy, and livestock is an integral part of agriculture development. During the first phase of the long-term development plan (1969-93), the livestock sub-sector has contributed significantly to the development of agriculture. Although the share of the agriculture sector to national gross domestic product (GDP) decreased from 42% in 1969 to 18% in 1993, the contribution of the livestock sub-sector to agriculture GDP increased from 6% to 10.5% in the same period. For the second phase (1993-2018), the livestock sub-sector is estimated to grow 6.4% annually which compares to food crops 2.5%, estate crops 4.2%, and fisheries 5.2%.

Role of livestock in national development

The role of livestock in national development covers the following areas:

Livestock as a source of food supply

The supply of meat from ruminant and non-ruminant livestock increased from 309 t in 1969 to 1749 t in 1997. Of this amount, poultry meat was the largest contributor (59% or 1024 t) followed by ruminant meat (30% or 527 t). Egg production was 58 t in 1969, and this increased to 818 t in 1997. The purebred chicken egg is the largest contributor at 66%, followed by duck egg 19%, egg and free-range chicken egg 16%. Domestic dairy products increased from 29 t in 1969 to 447 t in 1997.

Livestock as a source of income and labour absorption

At the farmer level, livestock and their products are a source of cash income as well as a reserve and a way of savings. Livestock minimize the risks of harvest failure.

At the national level, livestock contribute 11.5% to agricultural GDP or 2% to the national GDP. Livestock is a new growth source in the agricultural sector – its growth rate of 6.4% per year is higher than that of other sub-sectors. It can create job opportunities and the 6th Five-Year Plan has targeted an increase of 456,000 new jobs.

Livestock for sustaining agriculture and environmental conservation

Research and experience show that mixed crop-livestock farming is profitable. Livestock complement other farm activities and the interaction between farm animals and farmland can improve soil fertility. Research shows that manure can be an alternative to lime for reclamation of acid farmland. Livestock can serve both as a source of power for

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ploughing paddy fields and as a means of rural transportation. In 1992, an ADB study suggested that distribution of beef cattle was conducive to expansion of paddy field and non-irrigated field, by 23% and 26%, respectively. Farm animals can be used for conservation of farmland, particularly in the prevention of erosion. Most conservation-related government programs include livestock as one of its components.

Livestock for poverty alleviation

Many smallholders own livestock and depend on it for income. A 1975 study by the University Gajah Mada indicated that farmers with less than 0.4 ha of land generate 34% of their income from livestock. The corresponding figure for farmers owning 0.4 - 0.8 ha is 22%, and from 0.8 upwards, 16%. Another study shows that a farmer who received a cattle loan (IFAD Project) earns 63% higher income than a farmer who did not. In a survey in Indonesia, 40-50% of respondents identified livestock as an important component of the poverty alleviation program.

Livestock for industries

Livestock also has the important role of providing raw materials to industries, either food or non-food. For the food industry, livestock provides raw materials such as meat, egg, and milk. For the non-food industries, livestock is good source of leather/skin, bone, horn, or other animal waste products.

Policy of livestock development in the 6th five-year development plan (1994-1999)

The goal of livestock development is to:

- Increase income from livestock through optimising production capabilities, use of advanced technology, and increasing business efficiency.
- Increase livestock production to fulfil domestic demand, provide raw materials to industry and to enable export and import substitution.
- Improve quality of food and community nutrition through diversification.
- Develop agribusiness to encourage livestock development as an effort to increase income, create jobs and develop the rural economy.
- Optimise the use of natural resources for the benefit of livestock production and encourage environmental conservation by means of recycling waste.

Strategies

The attainment of this goal requires a strategy using three development approaches:

Technical approach

The main target is to increase livestock population. The approach is to increase livestock birth rate by means of artificial insemination and embryo transfer. To minimize mortality, animal health programs should be conducted: quarantine, vaccination, controlling slaughtered of productive female livestock, and importation of high-quality breeding stock.

Integrated approach

The target is to increase production through intensification. This means solving problems by integrating production, economic, and social aspects of technology development.

Agribusiness approach

The target is to optimise utilization of resources. With this approach, the smallholder farmers and livestock enterprises cooperate in farm supply, production, processing, and marketing.

Problems

- Scale of business ownership is relatively low.
- Operationalisation of livestock production and productivity has not been achieved yet.
- Animal disease outbreaks often occur.
- Dependence on provision of raw material for feed.
- Discrepancy between technology development and application at the farmer level.
- Farmer institutional needs to be improved through cooperatives.
- Inadequate infrastructure.

Targets

- 6.4% livestock growth to support 3.4% growth in agriculture.
- Absorption of 456,000 additional labour.
- Increase in production of meat from 1.3 million t to 1.6 million t (5.5% increase); egg from 636,000 t to 784,000 t (5.4% increase); and milk from 425,000 t to 530,000 t (5.7% increase).
- Increase in population of 11 species of livestock from 33.9 million units to 48 million units (8% annual increase).
- Increase in animal protein intake from 3.6 g/capita/day to 4.5 g/capita/day. At the end of the 6th Five-Year Plan, it is hoped that an average annual per capita consumption of 7.6 kg of meat, 3.0 kg of egg, and 6.2 kg of milk will be reached (3-4% increase).
- Investment in livestock development during the 6th Five-Year Plan of Rp. 5.5 - 7.9 trillion (or Rp. 1.1 - 1.6 trillion per annum).
- Import substitution to reduce the negative trade balance.

Programs and projects

Under government support programs

Integrated Smallholder Agricultural Development Program

This program aims to increase the role of small-scale farm business by providing guidance to farmer groups and cooperatives. It is hoped that farmer will be independent and will take steps leading to farm industrialization based on a model developed by the Applied Centre for Agribusiness Development of Superior Farm Commodities.

Agriculture Business Development Program

It is hoped that this program will accelerate rural economic growth by intensifying capital, technology, management, and market access. Participation of BUMN (state-owned corporation) and BUMD (regional government-owned corporation) and cooperatives will be sought, as well as the private sector, and the farmers themselves to bring about a mutually profitable integrated agribusiness or agroindustry. This will require a climate conducive to private sector investment and must involve small-scale farmers.

Food and Nutrition Diversification Program

This program aims to consolidate the twin objectives of food self-sufficiency and improved nutrition through food diversification.

Agriculture Resources, Input Supply, and Infrastructure Development Program

This program aims to improve the quality of human resources and maximize the use of natural and agricultural resources and supply. The construction and development of facilities and infrastructure, in addition to the development of farmer institutions are intended to ensure efficient and effective use of all development resources.

Support Programs
This is divided into a program for effective use of system implementation and control, and a program of statistical improvement and development.

Private programs and projects

Development of beef cattle industries

Three models are being followed:
- Fattening nucleus scheme.
- Feeder cattle nucleus scheme.
- Feed stuff nucleus scheme.

Development of dairy cattle industries

Integrated efforts have been made to consolidate this type of agribusiness covering improvements in breed and feed, and animal health and reproduction. Farmers' organizations are also improved.

Development of poultry industries

The development of a purebred chicken industry will be pursued in close partnership.

Functional policies

There are five main functional policy elements in national livestock development: (1) animal health system, (2) livestock breeding system, (3) livestock production and farming system, (4) livestock distribution and development system, and (5) livestock agribusiness system.

National Animal Health System

Animal health status
Of a total of 226 kinds of animal diseases that exist in the world, 87 (40%) occur in Indonesia. Of the 44 sporadic diseases, 11 have been declared eliminated (as declared by the Minister of Agriculture's Decree of 31 January 1994) and two have been stated as case free (i.e. Malleus and Blue Tongue on serologic testing prior to be stated as a free disease). Since October 1990, Indonesia has been declared free of food and mouth disease. Without adequate and appropriate control of endemic and epidemic diseases , it is estimated that there would be annual losses of about Rp.100 billion. With the current control system, the losses can be minimized to 50%.

Animal health approach
The animal health approach consists of five components: animal protection, animal disease surveillance, prevention and control, veterinary public health, and veterinary drug control.

Animal health operation
The national animal health operation consists of four activities: integrated animal health services, protection of breeding environment, protection of natural resources, and protection of livestock products.

Animal health infrastructure
The main units of animal health consist of 7 Diagnostic Centres, 24 type-B and 51 type-C animal health laboratories, 1 veterinary drug assay laboratory, and 1 residue assay laboratory.

National livestock breeding system

Beef cattle breeding

The national livestock breeding system aims to ensure adequate and good-quality breeding animal. There are three priority commodities in Indonesia's breeding development: beef cattle, dairy cattle, and poultry.

Dairy cattle breeding

Although the dairy cattle population increased significantly, there are problems of productivity, efficiency, and farm management facing the industry:

- Feeding management, particularly in feed quality.
- Reproduction and long calving interval.
- Mastitis, particularly subclinical symptoms.
- Poor milk quality caused by inadequate quality and quantity of feed as well as poor hygiene and sanitation.
- Poor farm management resulting in higher cost and lower productivity.

Poultry breeding

The 'native' chicken development was carried out with intensification of vaccination and mass guidance program. The breeding of commercial improved chicken is conducted by a number of breeding farms scattered throughout the country. In 1997, there were 116 chicken breeding farmers, operating in pure line farms, 16 grand parent stock farms, and 120 parent stock farms with 1.5 trillion day-old-chick production capacity and 195 million layers.

National livestock production and farming system

The objectives of the system are to:

1. Achieve the projected production target.
2. Increase farmer's income and welfare.
3. Provide job and business opportunities mainly in the rural areas.
4. Assist in the formation of farmer groups, cooperatives and rural economic institutions.
5. Promote cooperation (partnership) between farmers and enterprises to increase added value adding.
6. Improve efficiency, productivity, and product quality to meet consumer's demand.

The system has four subsystems – namely ruminant production development, non-ruminant production development, poultry production development, and minor animal production development.

Livestock distribution and development system

The livestock distribution and development system aims to optimise the use of under-utilised land to increase livestock production, to increase farmer's income and welfare, to alleviate poverty, and to fill the gap between regions and groups.

The system consists of four subsystems – the humid areas, the arid areas, the critical areas, and the border areas.

Livestock agribusiness system

In the 6th Five-Year Development Plan, livestock agribusiness and agroindustry is targeted to:

1. Enhance the growth of livestock GDP to 6.4% per annum.
2. Support the investment to Rp 5.5-7.7 trillion.

3. Increase job opportunity in the livestock sub-sector to 3.5% per annum and labour absorption to 456,000 people.
4. Increase labour productivity by 2.9% per annum.
5. Create a conducive situation for investment in agribusiness.
6. Fill the gap between regions by enhancing development of the eastern part to the country.
7. Alleviate poverty.
8. Substitute import commodities and promote export of livestock commodities.

National forage production system

As the ruminant population increases, the demand for forages increases accordingly. It is calculated that the demand for 1998 alone is equivalent to 37 million tonnes of dry matter. To meet this demand, several programs on forage development have been launched. These efforts could be divided into four categories:

1. Intensification, through a program of planting improved species such as Napier, King grass, and legumes.
2. Extensification through establishment of grazing lands and forage multiplication stations.
3. Rehabilitation of critical lands.
4. Diversification, through increased use of agricultural and industrial by products.

Constraints to forage development

Forage development programs in Indonesia face several constraints. The major ones are as follows:

- The average land owned by a farmer in Java is very small. It is difficult to expect farmers to plant forages on this limited area, which is mainly planted to food crops. In the outer islands, farmers do not consider forage supply a serious problem, since a vast area of natural grassland is available, and herd size per family is small in this region.
- Investments to improve natural pasture and cultivated pasture are high. The shortage of seeds (due to low seed production), the price of fertiliser and the high cost of transportation of vegetative planting materials limit improvement efforts.
- Forage production technologies are still new to farmers. The lack of knowledgeable and experienced technicians and extension workers results in low rates of adoption.

The prospects for increasing forage production

Prospects for increasing forage production in Indonesia depend on the development of the ruminant industry. With increasing demand for meat and milk, the ruminant population should increase to meet this demand. Hence, the need for forages will also increase. Also, with pressure from population growth and with the establishment of new economic areas, existing natural pastures will be converted into cropping areas and construction projects, further reducing the feed base.

There is a tendency to involve forage development in new development programs, such as reclamation of critical lands, watershed management, and reforestation, which are aimed at improving the welfare of farmers in the surrounding areas.

Some grasses and legume species suitable for different agro-ecosystems have been identified through, among others, the forage seeds project. These species are being integrated into upland farming systems through the Forages for Smallholders Project. To assist farmers, technicians and extension workers have been trained in forage agronomy and in the participatory approach. Soon more staff will undergo similar training.

Livestock towards an international free trade

The major force that influences the livestock industry in Indonesia is the continued movement toward open and free trade and investment at the global and regional levels in the face of the implementation of the Uruguay Round of GATT and the evolution of regional trade groups such as the EC, NAFTA, AFTA, and the emerging APEC forum.

In anticipation of these situations, the government has formulated several policies to strengthen livestock development in the country:

Beef cattle

The following principles will be followed: increase beef cattle population; balance supply and demand; decrease on import; value added; and people participation. Application of a non-tariff policy through a 'technical barrier on trade' in the short-term:

1. Import cattle should be feeder steers, 2.5 years, maximum weight 350 kg; go through a feedlot system for at least 60 days; and 10% of imported cattle should be pregnant heifers to increase livestock population.
2. Since the importer/private company do not want to cooperate with farmers, they have to buy 20% of the local feeder steers.
3. As per the decision of the Working Group on Agriculture and Food Cooperation of Indonesia-Australia, feedlot operators are called upon to set aside 1% of their profit for purchasing cattle for farmers.

Implementation of technical policy through

- Beef cattle intensification (INSAPP)
- Development of village breeding centre (Gerbang Serba Bisa)
- Development of priority commodity (SPAKU)
- Development of livestock in transmigration areas
- Strengthening of beef cattle breeding (Inpres Perbibitan)
- Eradication and control of brucellosis.

Poultry

Trends in poultry development show that supply is greater than demand. The oversupply of poultry would be exported. The government policy is directed at increasing efficiency and productivity, to enable poultry producers to compete in the market through better quality products, competitive prices and good delivery systems.

Dairy Cattle

Continue the consolidation program using the agribusiness approach through the cooperation between GKSI (Union of Indonesian Dairy Cooperatives) and the IPS (Milk Processing Plant).

Conclusions

Considering the achievements of the 1st Long-Term Development Plan, the livestock sub-sector has good potential as a source of growth and is considered a new development source within the agricultural sector.

Livestock development in Indonesia can give great opportunities for use of resources, employment, and marketing expansion. The recent deregulation imposed by the government has encouraged investment efforts, particularly to promote export and to provide more job opportunities.

In spite of the success in livestock development, some problems and constraints remain such as lack of standardization of livestock products, lack of an efficient marketing system, low level of animal protein intake, lack of knowledge transfer, and animal disease problems. Therefore, livestock development in each operational activity shall focus on harnessing the existing potential of natural and human resources.