

CONCEPT OF A REX RABBIT FARMING BASED ON A PARTNERSHIP AGRIBUSINESS SYSTEM

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Abstract - Rabbit raising in Indonesia is characterised by small in scale, limited knowledge of technical farming operation, lack of ability to market products and lack of formal and informal cooperation among the raisers, hence the production is hardly growing or developing. It is however recognised that in particular areas rabbit raising contributes meat production and small but significant cash income for farmers. Recognising the potential of some breeds of rabbits, which requirements may fit to the condition in Indonesia, a concept of integrated Rex rabbit agribusiness is offered. The principal concept involves an interdependent collaboration of a cooperative (shared by farmers) and an industry or organisation (private sector). A village breeding is set up and acts as a core (nucleus) for small farmers (members of the cooperative), whose function are producing meat and skins. Post-harvest handling, processing and manufacturing products could also become parts of cooperative operation provided the skill is available. Industry provides necessary investment and technology, assistance for the cooperative management and is also responsible for the distribution and marketing of the products. Bank or other credit company could be involved for financial support, while Government Livestock services and Industry Services participates in building and control of the system.

INTRODUCTION

Thirty years ago, Indonesia was among the poorest countries, with the GNP per capita of approximately US\$ 60.00. In the late 60s, Government of Indonesia adopted a development strategy pursued through successive five years plans for broad based economic growth, particularly of those of rural development. Thereafter the GDP growth has been almost 7 % annually, which was above of the average for most developing countries and a par with East Asia, the most dynamic region in the developing world.

The agricultural sector has made a major contribution. Value added from agricultural products has grown over 4 % per year in real terms during the previous decade (CBS, 1994). A large part was due to rapid expansion of rice production along with the steady growth of livestock, fisheries and cash crops, hence rural smallholder poverty is reduced. Farm labourers and self-employed farmers accounted for about three-quarters of the decline in aggregate poverty over the period (WORLD BANK, 1990).

In general, livestock can best contribute to poverty reduction through improvement of efficiency in an integrated farming system, rather than through the addition of free-standing intensive enterprises (WORLD BANK, 1990). Research by MURTISARI and RAHARJO (1995) and by SUMANTO *et al.* (1996) indicated that at village level income of farmers through rabbit raising were higher than without rabbits, primarily because of meat and fur production. Their efficiency was also related to the use of crop/vegetables residues for rabbits and manure from rabbits to increase soil fertility for crop/vegetable production.

Rabbit could make a significant contribution to meat production in a small as well as large scale operation because it has a small size, rapid growth, high reproductive potential (RAHARJO *et al.*, 1986a ; CHEEKE *et al.*, 1987) and has the ability to convert forages into meat (RAHARJO *et al.*, 1986b ; 1990) and by-product feeds (RAHARJO *et al.*, 1988 ; SARTIKA and RAHARJO, 1995). In addition, rabbits, especially Rex breed produce attractive and high quality fur, which could be used for expensive fur products, such as stuffed toys, scarves, hats, handbags or even coats.

In Indonesia, leather industry is a high added value export agribusiness and leathers and its products has become the third leading export commodity. Ironically, however, supplies of in-country raw materials are limited, hence most of raw materials used are imported (KISMOMIHARDJO, 1992). Domestic supplies are

usually collected from smallholding farmers through brokers and continues to bigger collector prior to the leather factory. Such system to some extent, increases marketing chain, hence increases inefficiency or creates high-cost economy.

Livestock smallholders, including rabbit farmers are usually having poor bargaining power. Cooperative built within them could theoretically support the management system. This, in many cases, however, do not work as it is expected. Mainly due to lack of managerial skill of the cooperative management (usually appointed from the farmer group) as well as less awareness of the farmers on the importance of being in a group. This paper discusses the concept of integrated Rex rabbit farming based on a partnership-agribusiness system in supporting both domestic and export oriented agribusiness.

REX RABBIT

As occurs to many other breeds of rabbits, Rex is also raise to produce meat. However, since Rex produces soft and luster fur, which create a high value, raising Rex is mostly aimed at producing such beautiful fur. Its physical leather quality (Table 1) meet the standard of coat manufactured from goat leather (DEPT. INDUSTRY, 1974). Nonetheless, for Rex fur, attention must be paid for the uniformity of fur quality, i.e., colour, lustre, density, and texture. Selection program for fur quality within strain is therefore extremely important. Variation of the above values, within each measurement, occurred due to various slaughter ages or environmental treatments such as nutrition, environment, and management (RAHARJO, 1994).

Table 1 : Quality of tanned rabbit skins raised in various parts in Indonesia

Measurements	Californian ¹	NZW ²	Rex ³	SNI ⁴
Weight of raw pelt, g	--	--	160-307	--
Weight of skin, g	185-218	218-257	98-117	--
Area of skin, cm ²	1263-1404	1444-1749	732-1174	--
Thickness, mm	0.63-0.66	0.66-0.70	0.60-0.70	0.70
Breaking length, %	51.3-52.3	57.5-61.3	65.0-79.0	> 50
Piercing elasticity, kg/cm	48.4-49.4	47.2-48.9	57.8-80.6	--
Tensile strength, kg/cm	108-115	112-114	150-240	> 200
Stretching strength, kg/cm	43.9-44.7	43.7-46.3	18.8-26.3	17.5
Sewing strength, kg/cm	--	--	82-143	20

Sources : ¹ Susanto [1985], ² Raheerjo et al [1990a, 1990b, 1993], ³ Industry National Standard, Dept. Industry [1994].

Rabbit is considered as a fast growing animal. Its growth as measured by the average daily gain (ADG) of rabbit raised in the tropics, however, is less than that of raised in the sub-tropics due to heat stress and feed intake (CHEEKE *et al.*, 1987). Nevertheless, their ADG value is comparable to that of broiler chicken (RAHARJO, 1994). Moreover, one important aspect of rabbit raising is the ability of rabbits to utilise forages and by-product feed. This potential is particularly important with the small scale raising in the village, in which forages and by product feed are usually abundantly available. This is also true in the case of Rex rabbits raised in the village (SASTRODIHARDJO and RAHARJO, 1992).

An economic analysis of raising Rex rabbit at different scale of production, at a semi intensive system, in which small scale farming showed that Benefit Cost (B/C) ratio was 1.1-1.7 and internal economic return was more than 50% (SASTRODIHARDJO and RAHARJO, 1992). Similar reports were presented by MURTISARI and RAHARJO (1995) and SUMANTO *et al.* (1996), who studied the effect of various scales of raising (number of animal raised in a period of time) in a village raising system. Their results revealed a significant cash income was contribute to the total earnings of farmers. In other words, Rex rabbit has a great potential to be raised in a small scale farming system to produce meat and skin at a large number in a relatively short time (Table 2).

Table 2 : Scale of raising, production and estimate of earnings by farmers, every 1.5 month

Scale	Slaughter Weight, g	mortality %	Fur quality grade, %			Production cost Rp.	Total Earnings, Rp.
			1	2	3		
5 ¹	2511	52	80	20	--	5.600	15.855
10 ¹	2462	50	100	--	--	12.000	33.468
15 ¹	2540	33	35	55	10	24.000	60.601
15 ²	2729	11	72	17	13	69.848	146.967
20 ²	2353	35	50	15	15	140.290	178.539
25 ²	2661	31	47	22	10	176.265	246.567

Sources : ¹ Murtisari *et al.* [1995], ² Sumanto *et al.* [1996], total numbers of animals were 3 x than those of ¹ USD 1.00 = Rp. 2250

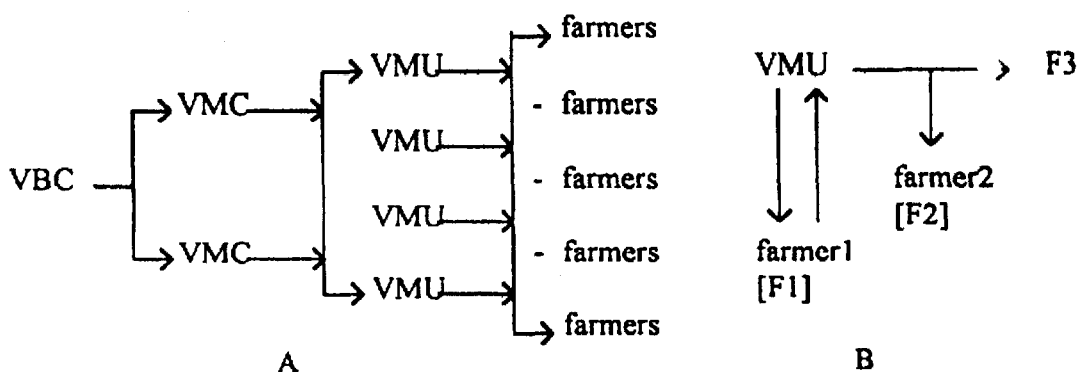
EXISTING CONDITIONS

Rabbits form an integral part of the complex farming activities of small farmers. Rabbits suitable to be raised in the small scale backyard farming system involving rural dwellers (LEBAS, 1983), who are usually very low income farmers. Program of raising rabbits for family meat consumption in the rural areas (DGLS, 1981). A number of 5 millions of rabbits were to be distributed to 10 most populated provinces within 6 years. The system involved distribution of a package (1 buck and three does together with a hutch and its facilities) to a family, and within one year, the family has to return 2 packages to the Unit, which will redistribute the rabbits to other families (Figure 1). In some areas in Java, in the first year, this program was proven to be successful (SITORUS *et al.*, 1982). Rabbit raising program for improvement of nutritional status of rural dwellers was booming. Almost every family, especially in the area closes to the Breeding Centre, raised rabbits. This situation, however, did not last long. No economic incentives earned for the farmers and lack of continuing funds caused the interest to continue raising rabbits has been declining (SASTRODIHARDJO *et al.*, 1988).

Problem in raising rabbits for commercial purpose is lack of managerial skills, especially with the small scale farming. High mortality rate, poor nutrition, and poor management are very common cases which potentially increase the production cost and problem in marketing (RAHARJO, 1994). In addition, fur priming time, that determine fur quality, varies among individual rabbit, yet, small farmers are usually unaware of such prerequisite.

Livestock market system for small farmers are largely informal, with private traders dominating. The smallholder producer has considerable discretion as to when and where he/she sells. Inadequate marketing is often a major constraint on production of Rex rabbit for small farmers. The components of a product marketing system have become all the more crucial to small farmers as the money economy has gradually penetrated rural sectors previously operated at subsistence level.

Figure 1 : Distribution and redistribution scheme of rabbits to rural dwellers



One of the most important support functions of government is to offer small farmers or smallholders the technology to expand their productivity and incomes. The current system of research and extension suffers from several weaknesses which constraint its effectiveness in addressing the need of the small farmers.

According to the World Bank report (1990) firstly, it is estimated that only half of Indonesian farmers are reached by the extension services. Secondly, since research and extension target primarily monocropped farms, similar attention has not been paid to livestock and the diversity of farming systems followed by farmers in other areas. Thirdly, little attention has been given in research to the special need of the farmers, who are often unable to adopt the optimum recommendations.

Therefore, an interdependent collaboration of farmers, farm cooperative, industry and government, implemented through an agribusiness development approach is essential to overcome those problems.

AGRIBUSINESS DEVELOPMENT APPROACH

During the last 25 years, the basic approach to Indonesian livestock development has followed a commodity approach. This sometimes caused inefficiency in resources utilisation and created conflicting interests among subsectors and hampering the smooth implementation of integrated livestock programs. The integrated business development approach, beside its ability to overcome these problems, can also diversify livestock development or broaden the spectrum of livestock activities and promote interlinkages amongst subsystems. The latter approach is more suitable to support livestock development in the changing national and international economic structure.

As a general guideline for long term livestock development, efficient and effective agribusiness development should be implemented through : a) improvement in the quality of human resources ; b) diversification ; c) rehabilitation and sustainable development ; and d) democratisation and active participation of the rural community to achieve equity in development with growth and stability (SOEHADJI, 1992).

With relatively efficient economic scale, participation of the private sector in providing support services for agribusiness development should be induced. The role of government are : a) provision of technological packages ; b) providing market information ; c) infrastructure development ; d) extension services and e) provision of rules regulations, and incentive structure for balanced development and interdependency between economic institutions such as cooperatives, state-owned enterprises and private enterprises (SOEHADJI, 1995). In sum, the agribusiness development approach is to recognise that increasing farmers' welfare is no longer regarded as something that can be safely left to the process of production growth, but should be pursued by more structured development planning and program. This approach recognises all aspects of agribusiness, such as farming, harvesting, processing, product distribution and marketing.

AGRIBUSINESS IN RABBIT INDUSTRY

As indicated above, that one of the government roles in enhancing the development of the livestock industry is through regulation. This policy develops cooperation between livestock enterprises and farmers. The supervision of livestock farming can be classified into :

Industrialisation of Smallholding Farmers

The characteristics of industrial smallholding farmers are a close relationship with smallholding farmers using new or advanced technology, having standardised product quality and performing business efficiently. This system creates a linkage between up-stream (breeding stock, medicine, feed) and down- stream (processing and marketing) industries. Having demand elasticity of high income, it has resources base, therefore it can have a more comparative and competitive value.

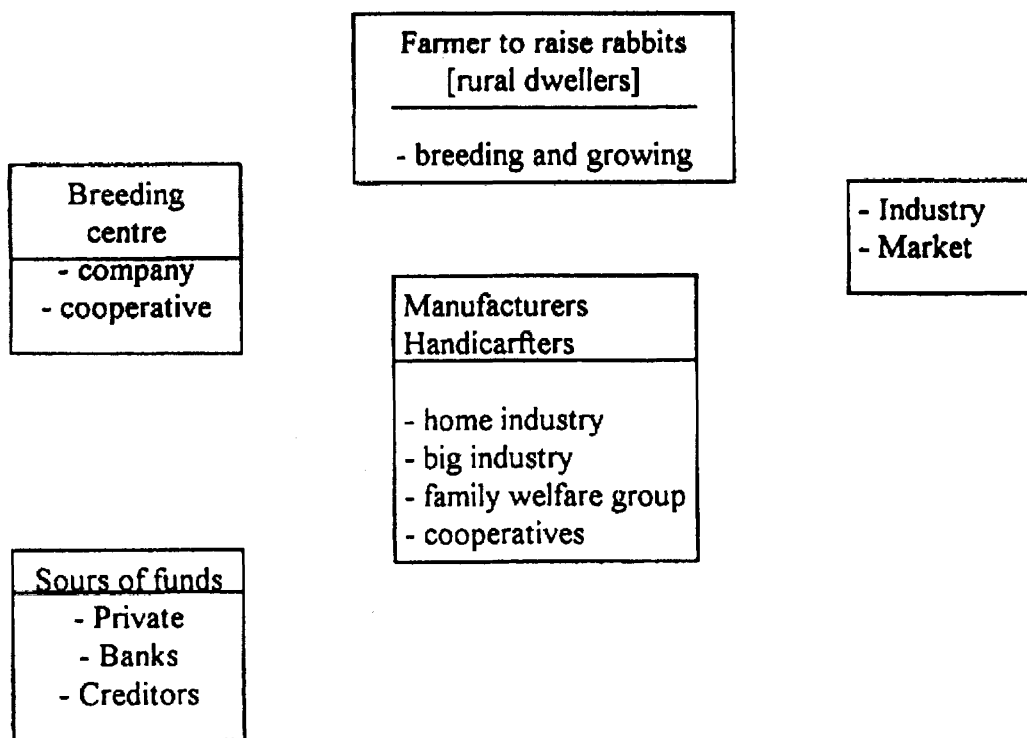
Nucleus Plasma Scheme (NPS)

The nucleus plasma scheme developed in order to support industrialised of smallholding farmers system. NPS is a cooperative scheme between an enterprise or cooperative as a nucleus and farmers as plasma. This system will also support the technological adoption process, increase efficiency, product quality control and reduce risk and loss (SOEHADJI, 1992).

STRATEGY AND MODEL OF FARMING IN A CONCEPT OF PARTNERSHIP

Relying the success of agroindustry, large or small scale, on the small farmers alone is risky. Lack of management and marketing capability are major constraints. Involvement of private industries is therefore almost indispensable. The nucleus-plasma system indicated above which introduced by Directorate General of Livestock Service (DGLS), with market oriented approach could be the most suitable strategy.

Figure 2 : A concept of partnership approach for Rex rabbit agribusiness



A village breeding is set up and acts as a core (nucleus) for small farmers (members of the cooperative), whose function are producing meat and skins. Breeding centre, managed by a cooperative or private company, provides weaned rabbits for rural farmers. Forages and labours are from farmers. In this system, farmers could also get benefit from the manure, which can be used to fertilise their vegetable crops. Waste or unsold vegetables can be fed to the animals. It is therefore highly recommended that farming of this breed of rabbits is conducted at vegetable growing areas.

Necessary feed supplements and/or medications are provided by a cooperative/private company. At slaughter age, cooperative/ company purchases the skins and meat at previously agreed price. Inputs such as weaning rabbits, feed supplement, medications are taken into account as a credit from the cooperative to the farmers. However, farmers are free to sell the skins to manufacturers or other home industry, provided that they pay the inputs provided by breeding centre. Manufacturers/home industry can also get the skins from the cooperative/company and sell the products back to the cooperative/company as well as to other consumers or straight to market. In other words, post-harvest handling, processing and manufacturing products could become parts of cooperative or company operation provided the skill is available. Industry provides necessary investment and technology, assistance for the cooperative management and is also responsible for the distribution and marketing of the products. Bank or other credit company could be involved for financial support. However, community based, revolving programs at the village level have demonstrated success in helping small farmers finance rabbit raising activities, with only modest financial support from external sources. This is an area in which cooperatives can play a greater role.

Government Livestock Services and Industry Services participates in building and control of the system. Adequate and efficient economic infrastructure such as power, telecommunications, transport and water are critical for continuing the partnership, and also contribute directly to small farmers living standards. Furthermore, the development of institutional infrastructure need to be enhanced in order to increase the

efficiency of the partnership between private company and small farmers. Institutional areas that need consideration are : a) establishment of a focal point in the national and regional planning, and development agencies to oversee and coordinate the development of partnership in rabbit production, and b) enhancing the effectiveness of local level officials, since the implementation of this programs will part of their responsibility.

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