

Rabbits Business Program of Rural Farmers in Indonesia (Preliminary Study for the Economic Empowerment)

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ABSTRACT

Various models of farmer empowering program have a significant role in the improvement of the economic conditions of farmers in rural areas. Indonesian Research Institute for Animal Production (IRIAP) has conducted "demonstration plot" of technology innovation of rabbits to selected groups of farmers in the village breeding centers, in Jambi, North Sulawesi, and Bali in 2012. To support the demonstration plot, rabbit breeds (150 does and 20 bucks), feed and some other equipment were given to each location. Training to the groups of farmers on feeding, breeding, housing, institutional groups was conducted before rabbits delivered. The farmer groups also participate in supporting the animal house building. All of the demonstration sites are located at an altitude of 800-1400 m above sea level and potentially producing vegetables and grass for ensuring the availability of feed. The rabbit breeds given in each location are New Zealand White, Rex, Crossing rabbits. The development of the rabbit population cannot all be monitored properly in each location, because of various delivering time for instance due to the administration problem in Bali, that only held recently in December 2012. In North Sulawesi rabbit mortality rate seems quite high mostly occurred during the delivery time: 2-16 head and after birth 56 head dead (before weaning) although a high birth rate (120 head) occurred. Economic empowerment of farmers in three locations seem unreal yet and need time- except in Jambi, because there are many issues to be addressed, such as technical issues, location, and other management problems. It seems that technology assistance is still needed, as well as apprentice for management and also monitoring and evaluation activities.

Key Words: Rabbit, Business Programs, Empowerment of Farmers

INTRODUCTION

As an agricultural country Indonesia has enormous land resources, including the potential of agricultural resources which, if it can be managed and utilized optimally, it would be able to support the improvement of people's income, especially small farmers in rural areas. Livestock commonly reared in Indonesia are beef cattle, dairy cattle, buffalo, sheep, goats, chickens village, ducks and pigs, which are generally reared complementary of each other the farmer's farm as a sideline business, even though sometimes have a big roles for the household economy. It has been realized that rabbit is not commonly kept by farmers in all regions in Indonesia, which is usually only reared spread around tourist sites and generally at moderate or high plains region. Mostly the goals of raising rabbits are to be slaughter to provide meat or sold for ornamental or pet animals, sometimes farmer use the urine and feces of rabbits for fertilizer.

Rabbits' farming is often found in various locations of medium or high plateau, generally vegetable farming communities that use the abundant vegetable waste product as its feed, in addition to forage grass, this waste can be potentially used as forage for rabbits.

Rabbits are able to grow and multiply rapidly from forage and crop waste. In traditional farming system, the productivity of a doe in a period of 1 year is able to produce as many as 16 heads youngsters aged of 4.5 months with the average weight of 2.5 kg, so that the total weight of live rabbits ready for slaughter is 40 kg (Raharjo 2008b). Potential productivity rabbits ready for slaughter weight can be increased in intensive rearing conditions (Maertens 2007). Other benefits that can earn money or to be beneficial is produced from manure and urine of rabbits. It should be noted that the rabbits are susceptible to bloating and diarrhea diseases with highly potential to cause death and this needs an extremely attention

especially by the novice breeders who are unfamiliar and inexperienced in rabbit rearing.

The potential productivity of rabbit ready to be slaughtered (about 4 month of age) comparing with models of fattened cattle or sheep shows that the meat production of 5 does are comparable with 1 cow and 2 does are comparable with 1 sheep (Raharjo et al. 2012). Government's or other's aid on ruminants or poultry is generally given to rural communities, which is not guaranteed to be successful and this is greatly influenced by the commitment of the beneficiaries. For this reason a rabbit farm assistance programs can potentially be used as an alternative to increase revenue, of the community empowerment in the sense of participation (UI Sociology Lab 2007) and economic growth in rural communities. Through this assistance program, it is expected to promote the establishment and development of "rabbit village" that covers such a large group of farmers which have business oriented.

SCOPE OF PROGRAM IMPLEMENTATION

In order to implement the assistance programs in rural empowerment rabbit breeders, the scope of its activities consist of:

1. Dissemination and presentation of the stage of the activity, determining the location and farmer groups. The mean of the presentation is to expose the scope and phases of activity to the Ministry of Agriculture, relevant agencies, farmers, to determine the location and the group of farmers. An agreement of cooperation between investors, managers (group) and supervisors. 3 districts chosen as location of the observation were: Kerinci district (The Province of Jambi), sub district of Tondano, district of Minahasa (The Province of North Sulawesi), and Tabanan district (The Province of Bali). This assistance was pursued to be a stimulant so that (hopefully) an additional funds as a form of partnership of farmers and local governments to increase the number of population and can further accelerate its distribution to members who require a breeder
2. Training of officer candidates at Breeding Center and prospective breeders. Training materials for staff and breeders are: about breeding, reproduction, production and environmental management, and the manufacture of feed rations, disease, waste processing, meat, promotion and marketing
3. Establishment of Rabbit Breeding Center and Standard Operating Procedures Provision (SOP). In the respective districts, formed a central location breeding rabbits was built as a form of "demonstration farm". To fill this building infrastructure, it also has been agreed that: land, buildings, labor provided by the group. While the means derived from Balitnak are: rabbits (for initial assistance program, it consist of 150 does and 20 bucks) and 170 units of cages and equipment (made of wire, complete with automatic installation of drinking water supply and sewerage), most labor fees, and pelleted feed to the start of production, during ≤ 6 months. The type of rabbit which was distributed to the group is NZW, Rex, Angora, Fuzzy and ND. The proportion of the type of the rabbits given is dependent on the agreement and adapted to the needs of the group.
4. Group structuring, agreements and cooperation conditions. Members of the group (plasma) obtain rabbits from rabbit breeding center (core) as many as 15 does and 2 bucks. The rabbit raiser as a member of the farmer's group do a deal and work procedures between nurseries (breeding center), farmers groups and supervisors of the production, with a production-sharing agreement as follows: 35% for nurseries (breeding center), 65% for farmer' group and 10% for supervisor. Formulation of product sharing is not rigid, adjustable mutual agreement. Trustees (supervisors) are appointed by agreement between nurseries (breeding center) and farmers groups and the supervisors are expected to be from (staff of) the government agencies. The product of the rabbits can be sold through the breeding center or sold by them selves to follow certain rules of the breeding

center. There is an agreement to cultivate forage/vegetable plantation by farmers as backyard farming and there is an investment sanctions of withdrawn rabbits, if this agreement is not fulfilled)

5. Initiation of the promotion and marketing of production. Expected promotion and marketing rabbits administered and conducted by farmer's group and also composed by members of the group
6. Guidance and monitoring. To ensure the appropriate management of SOP rabbit, monitoring will be done during the first 6 months by trained technicians from Balitnak and Balitnak also train personnel in Rabbit Breeding Center. Monitoring also conducted by researchers Balitnak/ Ministry of Agriculture/Department of related local

RESULT AND DISCUSSION

Stage and realization implementation activities

All stages of the initial activities have been carried out in three locations (Table 1) conducted in 2012, but the delivery date of rabbits is not the same among the three locations, because the initial site preparation, rabbits and rabbit cage arrived at the farmers group's place in different times (table 2).

The three locations (all location) are regions with an altitude of 800-1400 m above sea level and sources of grass and vegetable crops as green feed material suitable for the growth of the rabbit. Only the obstacles in areas of high humidity is too high, which would have much effect on rabbit health and consequently low productivity. Support facilities, such as materials, infrastructure and training to managers of rabbits has been provided and expected to yield rabbit product successfully and continuously which is the purpose and hope. It is recognized that the rabbit meat is not yet widely consumed and not easily marketed as a product of "meat", there should be assistance for promotion in marketing, except for the purpose of rabbits for sale as "ornamental" or fancy animal.

Population dynamics of rabbits

After the rabbits were delivered in the three locations by means of appropriate management capabilities of each group of farmers, the growth information of rabbit population is shown in Table 3. The birth rate of rabbit is quite high in all three locations, but the rate mortality of bunny is also high, such as in Bali the number of birth were 40 head, but all of them died. One of the reason of death is that the does is still holding stress and also lacks the nature of "mother ability" besides the officer is still not proficient and less attention to how to look after rabbit (Minahasa, North Sulawesi).

Table 1. Stage of the program rabbits in 3 locations

Activity	Location		
	Minahasa, Sulut	Tabanan, Bali	Kerinci, Jambi
Socialization programs to the authorities	v	v	v
Determination of the location	v	v	v
Socialization activities to groups of farmers	v	v	v
Building for Cages	v	v	v
Delivery cages and equipment	v	v	v
Training	v	v	v
Rabbits and feed delivery	v	v	v
Preparation of compost/urine/biogas	v/v/v	v/v/v	v/v/v

Source: Raharjo (2012)

v: conducted

Table 2. Actual implementation rabbit programs in 3 locations

Activity	Location		
	Minahasa, Sulut	Tabanan, Bali	Kerinci, Jambi
Socialization programs to the authorities	March 2012. Sekda, Kadistannakbun, BPTP, Uni Sam Ratulangi	August 2012. BPTP, Dinas Peternakan Tabanan	July 2012. BPTP, Dinas Peternakan Jambi
Location of Breeding Center (LBC)	LCB: Totolan village, Kakas	LCB: Candikuning Village, baturiti	LCB: desa Pasar Sungai, Kayu Karo, Jambi
Socialization activities to farmer's groups	Edenta Group (23 members)	Karimaju Group (30 members), Chief: I Nyoman Suta.	Harapan Bersama Group (26 members)
Building for Cages	Distannakbun, only cover 130 unit of cages	Group of farmer, provide building of 120m ²	Group of farmer, bunker for feces and urine fermentate
Delivery Time cages and equipment	August 2012. 150 unit cages and equipment	December 2012. Cages and equipment made in Bali.	Before November 2012. Rabbit cage (150 unit)
Training time SOP rabbit	September 2012. Disnabun, BPTP, Farmer Group Edenta, Pelita, Karunia, Citawaya, Yeremia, Tetap Berusaha, and Kinamang	September 2012 and 26-29 November 2012. Group Member Karimaju and Gapoktan Candi Catur Mandiri	November 2012. Group of farmer: 400 farmers
Rabbits and feed Delivery	September 2012. 110 pregnant does (40), 40 bucks	December 2012. 129 does and 31 bucks	November 2012. 120 does, 30 bucks

Patronage farmers group development

Farmer groups in the respective target location was initially very enthusiastic in accepting the introduction of technology. They prepared the requirements that must be provided in order to realize once received help from Balitnak. First, there is the preparation of land to build a cage to put the cages of wire support of Balitnak. Then a prospective cooperator farmer groups must be encouraged to be able to handle the business of rabbits in groups.

Each group leader looks quite aggressive in receiving training and assistance, the reverse is also very responsive in doing business in accordance with the technological rabbit they receive. At the beginning of the training activities carried out, accompanied by officers from the Department of the local farms. Once

in the event discussed all the things that need to be supported by animal husbandry department. Among others, is the existence of a special officer of the agency that monitors the development of each of the rabbit business in the group.

Patronage was focused more on the cultivation system for rabbits that were introduced at the same type of waste utilization of feces and urine that can be used for fertilizer as well as to the source of fuel gas or biogas. For further assistance in the form of livestock product processing and marketing is done in the next period. Responses were seen in all three locations of the farmer's group looks pretty good as well as the support of local authorities. But with the passage of time, some problems began to emerge.

Table 3. Development of rabbit populations in 3 locations

Items	Location		
	Minahasa, Sulut	Tabanan, Bali	Kerinci, Jambi
Total Rabbits born-head	120 (from 20 does)	40 (from 7 does)	140 head, 30 pregnant does
Mortality	bunnies (56), adult rabbit (36)	40 offspring	Low mortality (<10%)
Population 2012 (head)	Does (114), bunnies (35), post weaning(48)	Unrecorded	Unrecorded
Caused of death	-	Does stress on the way, Does lacked of "mother ability", so many bunnies died	-
Promotion of rabbit's product	Manado, 22-29 Sept 2012. Product: sausage, hair, bag	-	-
Aim of rabbit raising	Breed stock (Novice for breeding) Consumption, Commercial Rabbit	Breed stock (Novice for breeding), Consumption, Commercial Rabbit, Fertilizer	Breed stock (Novice for breeding), Consumption, Commercial Rabbit
Obstacle of rabbit raising	No group empowerment, good rabbit farming and technologies were not understood, farmers do not know the cost of feed, no rabbit sales target.	No group empowerment, good rabbit farming was not understood, there are many visitors, so rabbit stress	Techniques prevention and treatment of disease, the availability of feed less and far away, death at birth 1 fairly high)
Estimation of rabbit raising's benefit	Untouched	Novice for breeding (breed stock): 20. Profit per year: IDR 2,5 mil. Growing (3 month): Breed stock: 20. Profit/3 month: IDR 818.000.	Novice for breeding (breed stock): 150 Profit per month: IDR 20 mil.

Source: Raharjo (2012)

Institutional of the farmer's group

At first the Institutional of farmer's group at three sites, seems quite active, but in its development only in Jambi is still going well. The board is active in accordance with their respective fields. Similarly, members of the group meeting activity done regularly once a month by inviting local extension workers. During the meeting discussed various aspects relating to the business of their rabbits.

Rabbit farmer's group in Bali and Minahasa is not functioning properly, because the rabbit population is not increasing and a high mortality

was found there. Finally they work individually or members are not raising rabbit any more. The group abandoned the rabbits raising that resulting in not continuing the business of the group. Lodging in Minahasa, the Department initiated a local farm which still want to take advantage of the infrastructure that has been granted by Balitnak and bring back from them as many as 40 head (does and buck), so even slow but sure, have started increasing the rabbit population again.

Institutions that have emerged to support the development of new rabbit farming emergence of "middlemen" rabbit collector.

Other institutions such as drug store situated in the district that is located not far away, from where they can get medical material for the rabbits. While institutional feed does not appear because until now farmers do not use feed concentrate, vegetable waste from their own field are enough for their rabbits.

Rabbits business in non-supported farmer's group

Balitnak rabbit has developed quite well in Kerinci, Jambi and has expanded maintained in non-supported farmers. They get information from the instructor/local officer on the existence of a good quality of does, namely in the target group. In another villages with auxiliaries, there are already seen 3 groups of new farmers who are interested in rabbit farming. One group is already highly developed that have sold more than 1000 heads to earn revenues of more than 20 million/month. Rabbit (breed stock) were obtained from the supported group.

While in Minahasa District, there are some non-supported rabbit does farmer in Tonelet village, subdistrict Langoan West, which now has more than 57-90 and 10-20 bucks and more than 100 local young rabbit (bunny). Feed is provided in the form of agricultural waste and grass field. Housing system in this area is commonly used individual cages and separated kit from birth, only when breastfeeding the doe is inserted into the brooding cage. Breeders are able to sell the young rabbits (age 20-30 days) as "fancy" with the price of Rp 30,000-35,000/head per 3 weeks, 4 month of ages at Rp 125,000/pairs per month, and the adult rabbit Rp 150,000/head per 3 months. There are brokers who went around the village to collect/buy a rabbit from breeders. Pattern of non Balitnak rabbit breeders in Bali in general is almost the same as in Minahasa, where the number of requests for bunnies as "fancy" is still interesting in the community and still increased.

Problems and follow-up

Community empowerment is active when at least community participation has been actively participating in the following activities, but not related to the level of

success. Common problems taken by farmers for not being successful on the development efforts are:

1. Rabbit breeders do not only think about the raising of rabbit, but also looking for a form of marketing their products (mainly sales rabbits), because the rabbit products (rabbit meat) are still not fully accepted by consumers, so that the number of requests is limited. While mastering the ability of farmers in marketing rabbits are generally minimal or low. So farmers need to be provided for training before starting a rabbit business, especially on the issue of how to raise rabbit, marketing opportunities, processing, and product promotion.
2. Rabbits productivity is good (as rabbit is a prolific animal), it give a lot of bunnies (litter size range from 8-12, in at least every 2 months), but its mortality rates are also high, so it requires good management.
3. Raising rabbits did not succeed due to lack of special attention from the rearer, for it is necessary to have time and accuracy of the farmer who raise them.
4. The level of knowledge of farmers on rabbit farming is still low, so the role of business for training, apprentice to an experienced breeder becomes important.

Results preliminary economic empowerment

Process of empowerment activities take a long time, depending on the nature of the activities carried out. Evaluation of the results of the empowerment of an activity is generally done at the beginning, middle and after the implementation of the activities completed. Although it is still early stages of development rabbit in three locations, but it has given a positive outlook for the economic empowerment of rural through aid package of rabbits, especially in Jambi location. The success of economic empowerment through an activity, is determined by the commitment and good coordination among the performers to get to the target to be achieved (Sumanto 2013). The positive prospect of initial economic

empowerment in this locations can be seen in the following bench marks:

1. The level of development of the increase of rabbit population.
2. Group members play an active role in building of the sustainability of the farmer groups.
3. The number of group members increased.
4. Sales of rabbits out of the location has been done regularly, but still on a limited scale.
5. Revenue of the supported rabbit farmer increased.
6. Local government participates in promoting the rural economy through business assistance rabbit.

CONCLUSION

Rabbits have high productivity, at the initial stage showed activity can create income for farmers and the tipping point increase in the economic of the rural community.

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