

## **Empowerment of goat farming: Lessons learnt from the development of goat farming group of Peranakan Etawah Gumelar Banyumas (Pegumas)<sup>1</sup>**

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**ABSTRACT:** Goats' contribution to the livelihoods have been reported in many developing countries. In Indonesia, the majority of goats is concentrated on the Island of Java, and 23% of total population located in Central Java with the major breeds are *Kacang* and *Peranakan Etawah* (PE) goat. PE goats are dual purposes, besides producing meat they also producing milk as a daily income for the farmer. The purposes of this paper are to focus discussion on the empowerment of goat farming with reference on lessons learnt from the development of goat farming group of Peranakan Etawah Gumelar, Banyumas (Pegumas). This study was conducted at Outreach Pilot Project of Jenderal Soedirman University located at Gumelar Banyumas Regency Central Java. Total population of 920 goats and 32 farmers were involved in this study. Empowering Pegumas Farming Group was implemented in collaboration with the Faculty of Animal Science Development Team Jenderal Soedirman University.

**Key words:** empowerment, farming group, goat, *peranakan etawah*

### **INTRODUCTION**

Goat Farming Group of Peranakan Etawah Gumelar Banyumas (Pegumas) located at Gumelar, Banyumas regency, Central Java province, Indonesia. It goat farming group, the most popular center of *Peranakan Etawah* (PE) goat breeding in Banyumas Region. Production system in Pegumas Farming Group under condition of small-holder farming systems, and raising goats are usually part of integrated farming systems. Goat production is usually closely integrated into overall food production. Such as in other region, feed condition is low in protein and high in fiber, and also the quality and quantity varies considerably throughout the year.

Pegumas Farming Group consisted of 32 members with the total goat population about 920 head and dominated by PE does. All animals were raised under stilted housing. Their goat characteristic reported by Sodik and Sadewo (2008): larger body frame, long hanging ears, a convex face, larger horns, and coat colour dominated by white (88,02%), brown (6,69%), and black (5,29%). External body dimension of height at withers and ears length are  $86\pm 8.03$  cm and  $31.70\pm 2.70$  cm (buck), and  $77\pm 4.60$  cm and  $29.07\pm 0.3$  cm (doe), respectively. Average goat ownership was 10.9 STK/farmer (small ruminant unit), ranged from 2.2–33.2 STK (Setianto et al., 2009; Setianto, 2010).

Pegumas Farming Group created in 21<sup>st</sup> February 2002 with the initial member and goat populations were 11 person and 34 PE goat, respectively. Its goat farming group had a good qualification in dynamic group. They got qualification of grade (*Kelas Kelompok*) were (1) *Kelas Pemula* in 16 December 2002, (2) *Kelas Lanjut* in 6 December 2003, (3) *Kelas Madya* in 20 September 2004, (4) *Kelas Utama* in 14 December 2006, and (5) The best goat farming group at national level achieved in 2007. In 2007 and 2008, this goat farming group obtain credit from BTN and Syariah Mandiri Bank were Rp. 223,000,000 and Rp. 720,000,000, respectively.

In collaboration with the Faculty of Animal Science Development Team of Jenderal Soedirman University, various aspects of Pegumas Farming Group have been empowered includes (1)

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Introducing applied technology such as breeding, feeding and management practice, (2) Enlarging goat farming scale by increasing accessibility of Pegumas Farming Group to the bank, (3) Enhance network and market such as enlarging local, regional and national market collaboration with government and non government institutions, and (4) Developing new group as a filial of Pegumas Farming Group, located at surrounding areas of Gumelar in collaboration with the Directorate General for Livestock Services Ministry of Agriculture. The purposes of this paper are to focus discussion on the empowerment of goat farming with reference on lessons learnt from the development of goat farming group of Peranakan Etawah Gumelar Banyumas.

## MATERIALS AND METHODS

This study was conducted in Gumelar Sub-district, the center of *Peranakan Etawah* goat development in Banyumas Region, Central Java Province. This study focused on Goat Farming Group of Peranakan Etawah Gumelar Banyumas (Pegumas). It group as an Outreach Pilot Project of Animal Science Faculty Jenderal Soedirman University Purwokerto. Total population of 920 goats and 32 farmers were involved in this study. Empowering Goat Farming Group of Pegumas was implemented in collaboration with the Faculty of Animal Science in terms of Faculty of Animal Science Development Team. Livestock On-Farm Trials was conducted using the following approach: (i) focused group discussion, (ii) in-depth interviews, and (iii) on-farm observation. Descriptive statistics and root cause analysis were applied in this study.

## RESULTS AND DISCUSSION

The main target of the collaboration program between Faculty of Animal Science Development Team Jenderal Soedirman University Purwokerto and Pegumas Farming Group addressed to increase *Peranakan Etawah* goat population and productivity, improving efficiency and increasing income of the farmers. Improving academic relevance such as research, practicum, field work, farm visit, internship, and extension services are also paying attention in this program. Various aspects have been empowered in Pegumas Farming Group including (1) Introducing applied technology and Livestock On-Farm Trials, (2) Enlarging goat farming scale by increasing capital from bank i.e. getting credit from BTN and Syariah Mandiri Bank, (3) Enhancing network and market such as enlarging local and regional market collaboration with government and non government institutions, and (4) Developing new farming group in term of the filial of Pegumas farming groups located at surrounding areas of Gumelar supported by Directorate General for Livestock Services Ministry of Agriculture.

### ***Introducing Applied Technology and Livestock On-Farm Trials***

Applied technology including aspects of breeding, feeding and management practices were introduced to the Pegumas Farming Group. Improving goat productivity as a main goal of introducing applied technology. Some activities have been conducted to support the goal such as (i) *Program Pengabdian Kepada Masyarakat* founded by Jenderal Soedirman University, (ii) Program Iptekda LIPI founded by Indonesian Institute of Science, (iii) *Program Vucer* which are founded by Directorate General Higher Education, and (iv) *Program Bina Lingkungan* founded by Bank Indonesia.

The following title regarding the development program and the Livestock On-Farm Trials were conducted in collaboration with Pegumas Farming Group:

- a) Lending models for PE goat farming in Banyumas (Sodiq et al., 2006).
- b) Identification of production system of PE goat at Pegumas farming group (Sodiq et al., 2008).
- c) Profile of PE goat ownership based on physiological age, external body dimension and coat colors in Pegumas Farming Group (Cahyono et al., 2008).
- d) Qualitative and quantitative characteristics of PE goat in Pegumas Farming Group (Triadi et al., 2008).

- e) Correlation between farmers's rearing knowledge and productivity of their farming business of PE goat Pegumas Farming Group (Wibowo et al., 2008).
- f) Complete feed for increasing productivity of PE dairy goat (Yuwono et al., 2008).
- g) Increasing productivity of PE goat by the application of complete feed (Rustomo et al., 2008).
- h) Empowering program for increasing productivity of PE goat by the application of complete feed (Rustomo et al., 2009).
- i) Effect of the meal of banana cover to milk quality and quantity of PE dairy goat (Utami, 2009).
- j) Goat production system and development strategic for increasing their accessibility to bank (Sodiq and Setianto, 2009a).
- k) Adoption of Complete Feed Technology on PE Goat Farming in Banyumas (Setianto et al., 2009).
- l) *Ipteks buat Produk Ekspor* (IbPE): Industry of PE Goat Farming in Banyumas (Sodiq et al., 2009).

The limited production capacity in Pegumas Farming Group is caused by limited farm scale and productivity per doe. Feed availability is one of the main limiting factors that must be addressed immediately in order to increase goat's productivity. The objectives of development program were to (i) implement complete feed technology to produce goat's feed that available throughout the year, and (ii) increase goat's productivity by feeding them complete feed to increase milk production and weaning weight (Yuwono et al., 2008). The main constraints on goat raising related to feeds such as in Pegumas Farming Group, firstly the high cost of transport of crop residues and grass to the homesteads; secondly the low nutritive value of feeds used, particularly in the dry period (Sodiq and Setianto, 2010).

The alternative solution chosen to alleviate feed problem in Pegumas was introduction of complete feed. The program was implemented through (1) providing facilities for complete feed production, (2) training on complete feed production, (3) mass production of complete feed, and (4) feeding complete feed to PE goats. The implementation of the program can alleviate feed problem faced by PE goat producers of Pegumas. Technology of complete feed assures feed availability during the year, particularly during dry season; hence kid's performances (weight at birth and weight at weaning) were improved.

Contributing factors to the success of complete feed technology application includes (1) solid and dynamic farmer group, (2) good human resources, (3) entrepreneurial spirit of farmers, (4) desire for progress and new innovation. Feeding PE goats on complete feed resulted in an increase in average of milk production from 0.76 lt to 1 lt per day per doe, and total milk production from 20 lt to 30 lt per day. Average of weight at birth was increased from 2.5 to 3.5 kg and weight at weaning (3 months) from 15 to 18 kg (Yuwono et al., 2008) and doe productivity increased by 7, 2 and 5%, respectively (Sodiq and Setianto, 2009b).

### ***Enlarging Goat Farming Scale of Pegumas Farming Group***

Increasing goat farming scale of Pegumas as a result of their ability to attain credit from the bank. First, they obtain credit (Rp. 223,000,000,- ) from Bank BTN Purwokerto by *Program Kemitraan Bina Lingkungan* (PKBL) scheme with 6% interest rate, 6 months graze period and 5 years duration. Second, they obtain credit (Rp.720.000.000,- ) from Bank Syariah Mandiri Purwokerto by *Kredit Usaha Rakyat (KUR) Barokah* scheme with the interest rate of 8%, 6 months graze period and 3 years duration. Inhibiting factors experienced by those farmers in rural communities was seeking to obtain credit from banks, it was included (a) the lack of sufficient collateral, mostly farmer do not have the land certificate and BPKB, (b) the high of credit rate, (c) longer in gestation period, they need 8-9 months, (d) the lack of feasibility, and (d) insufficient of group dynamic (Sodiq, 2008; Sodiq, 2009).

Success story on increasing accessibility of Pegumas Farming Group to bank had disseminated in various seminar and meeting includes (i) National technical meeting for livestock development conducted by Directorate General for Livestock Services in Mataram, NTB at 23-25 April 2009, (ii) (iii) Scientific meeting in Jenderal Soedirman University at 25 November 2009, (iv) Regional meeting

in local government of Central Java province in Semarang at 24 July 2009, (iv) International seminar on Prospect and Challenges of Animal Production in Developing Countries conducted by Brawijaya University Malang at 23-25 March 2010, (v) The 31<sup>st</sup> annual conference of Malaysian Society of Animal Production in Kota Bharu Malaysia at 6-8 June 2010 (vi) National meeting for creating blue print of small ruminants conducted by Directorate General for Livestock Services in Bogor at 14 July 2010. The following aspects could be taken into account in regard with increasing the accessibility of goat farmer getting finance of bank, include (i) increasing the potential of individual farmer in term of knowledge and skill, (ii) creating goat farmer group dynamic, (iii) providing proven applied technology in order to increase feasibility, and (iv) nurturing group of farmer to bank such as information and accessibility to bank (Sodiq, 2008; Sodiq, 2009). Providing guarantee for collateral and also providing special credit scheme could be implemented especially for goat farming which are characterized by feasible but not-bankable business. The policy should be implemented in order to minimize inhibiting factors related to accessibility of credit through coordination among stakeholders including government, academician, businessman, bank, and social-community (Sodiq and Setianto, 2009a; Sodiq, 2010a).

### ***Enhancing Network and Market of Pegumas Farming Group***

Since 2009, Animal Science Faculty Development Team of Jenderal Soedirman University in collaboration with Directorate General for Higher Education carry out the new program called *Ipteks buat Produk Ekspor* (IbPE). The title of multi-years program is “IbPE for Industry of *Peranakan Etawah* Goat Farming in Banyumas Central Java”. The program was designed to solve various problems faced by goat farmer including on-farm aspect, promotion and market of goat products. In long-term, this program targeted not only domestic market but also export orientation. Table 1 provide the list of goat farming problems and alternative solution by applied technology (Sodiq et al., 2009). Pegumas Farming Group also build a network with university (Jenderal Soedirman University), local government (*Dinas peternakan dan Perikanan*), financial institution (BTN and Syariah Mandiri bank), marketing network (Bangun Karso Farm), several goat farming group in Kaligesing Purworejo, and also the Indonesian Sheep and Goat Farmer Association (*Himpunan Peternak Domba dan Kambing Indonesia*).

**Table 1.** Various goats farming problems and expected applied technology for solution

Aspect and Problems	Expected applied technology
Animal and production system:	Breeding technology:
(a) lack of qualified bucks and does (PE Grade A).	(a) introduce high quality of bucks and does (PE Grade A),
(b) some farmer have no buck	(b) grading Up,
(c) inbreeding	(c) recording and selection.
(d) no recording	Feeding technology:
Feed:	(a) complete feed and hay
(a) low nutritive value especially in the dry period	(b) utilization of agriculture and agro industry by product
(b) availability of forages is abundant in wet season	Production and reproduction technologies:
(c) agriculture and agro industry by product is available	(a) goat breeding practices
Doe and kid productivity:	(b) housing improvement
(a) low litter size	(c) feeding evaluation
(b) higher pre weaning mortality,	(d) calendar reproduction
(c) low weaning weight (ranges: 14-16 kg/kid).	(e) shortening kidding interval
(d) no continuity in kid production	(f) health care
Milk production:	Processing technology
(a) low milk productivity	Electronic technology (website) for expand network and market
(b) no continuity in milk production	
Processing and marketing:	
(a) limited processing product	
(b) limited networking and market	

### ***Developing New Group Filial of Pegumas Farming Group***

Two groups of goat farming namely (1) Penamas, and (2) Petramas have been developed by the initiation of Pegumas Farming Group. Since 2009, facilitated by Animal Science Faculty Jenderal Soedirman University, both group of Penamas and Petramas was founded by Directorate General for Livestock Services, Republic of Indonesia in terms of *Program Sarjana Membangun Desa*. The program designed to increase the animal population, farmers' income and also enhance the overall livestock farming sector in the village (Ditjennak, 2009; Sodiq, 2010b).

Penamas and Petramas group of goat farming was managed by one manager who is a graduate of animal sciences in order to accelerate agribusiness. The manager of Penamas and Petramas are Mr. Budi Priyono and Mr. Iwan Sutoro, respectively. They are responsible to manage overall daily goat keeping practices and also business aspect. In order to empower capital of farmer group, each group of Penamas and Petramas was financed Rp. 125,000,000 came from Directorate General for Livestock Services. Table 2 demonstrates the proposed budget in terms of target and realization until period of July 2010 (Sutoro, 2010). Goat population increased from 15 to 97 and 22 to 85 heads for Penamas and Petramas groups, respectively. Breeding and fattening program and also producing goat milk were implemented in goat farming group.

**Table 2.** Detail proposed budget, target and realization until period of July 2010

Component of Expenditure based on Rencana Usaha Kelompok (RUK)	Target (base on RUK)			Realization (July 2010)		
	Quantity	Unit Cost (Rp)	Total Cost (Rp)	Quantity	Unit Cost (Rp)	Total Cost (Rp)
1. Animal						
a. Buck (PE Grade C)	1	4,500,000	4,500,000	1	4,500,000	4,500,000
b. Buck (PE Grade B)	1	7,500,000	7,500,000	1	7,500,000	7,500,000
c. Doe (Jawa Randu)	40	1,300,000	52,000,000	40	1,300,000	52,000,000
d. Kids post weaning (Jawa Randu)	40	750,000	30,000,000	40	750,000	30,000,000
2. Housing renovation	1	11,000,000	11,000,000	1	11,000,000	11,000,000
3. Health care	1	1,000,000	1,000,000	1	1,000,000	1,000,000
4. Forages	1	2,000,000	2,000,000	1	4,000,000	4,000,000
5. Concentrate	1	1,500,000	1,500,000	1	1,500,000	1,500,000
6. Administration	1	500,000	500,000	1	500,000	500,000
7. Group development	10	1,500,000	1,500,000	8	1,500,000	12,000,000
Total	97	31,550,000	125,000,000	95	33,555,000	124,000,000

### **CONCLUSION**

Improving production system supported by good in group dynamic as a keys factor for the success of goat development program synergism among government, academician, businessman-bank, and social community could be take into account in the implementation program. Succes story of Pegumas farmer group can be used as a lesson learnt for other goat farmer group.

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