Proceeding

The 2nd Asian-Australasian Dairy Goat Conference

April 25-27th, 2014
IPB International Convention Centre Bogor, Indonesia

THE ROLE OF DAIRY GOAT INDUSTRY IN FOOD SECURITY,
SUSTAINABLE AGRICULTURE PRODUCTION,
AND ECONOMIC COMMUNITIES

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Bogor Agricultural University

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Foreword from Chairperson of Organizing Committee

Distinguished,

Director General of Livestock Services and Animal Health, Ministry of Agriculture, Republic of Indonesia, Ir Syukur Iwantoro, MS, MBA

Rector of Bogor Agricultural University, Prof Dr Heri Suhardianto

President of Asian-Australasian Dairy Goat Network, Dr JB Liang

Mayor of Bogor City, Dr Bima Arya

All participants of Asian-Australasian Dairy Goat Conference 2014

Good morning ladies and gentlemen, and Assalamualaikum wr wb.,

It is my pleasure to welcome you here for attending the Second Asian-Australasian Dairy Goat Conference at IPB International Convention Center, Bogor Indonesia. The theme of this conference is “The role of dairy goat industry in food security, sustainable agriculture production and economic community” which is organized by Bogor Agricultural University in collaboration with Asian Australasian Dairy Goat Network and Directorate General of Livestock Services and Animal Health, Ministry of Agriculture, Republic of Indonesia.

From the success of The First Asia Dairy Goat Conference on 9-12 April 2012 in Kuala Lumpur Malaysia, and to express the mission and the objective of Asian-Australasian Dairy Goat Network, it is necessary to continue the biannual dairy goat meeting in Bogor Indonesia. The primary objective of the second AADGC-2014 is to provide a platform for all stakeholders including researchers, academicians, policy makers, farmers, investors and other dairy industries to share experiences and networking to promote dairy goat farming in the Asian-Australasian region and beyond.

With saying Alhamdulillah, around 90 researchers from 16 countries around the world, 12 top universities and 4 research institutes in Indonesia have contributed some interesting topics to be discussed. The very important persons from 40 government livestock services officers in Indonesia, and more than 30 the best dairy goat farmers and companies from ASEAN counties are also with us here to make a forum group discussion in order to improve dairy goat production and markets. I have to stated here that all papers have been reviewed by the experienced international reviewers.

On behalf of the organizing committee we would like to welcome to all delegates from Malaysia, Thailand, India, Japan, Philippine, Vietnam, Iran, Pakistan, Australia, United Kingdom, Hungary, Egypt, Nigeria, Sudan and also from some provinces in Indonesia. To government livestock services officers and farmers from ASEAN countries and from east, middle and west
Java, and also some potential business companies, welcome and have a nice discussion. I hope this conference and network activities during 3 days will bring you new idea how to improve dairy goat for our lives and get more benefits for all participants.

We cannot make this event success without your contributions. In this occasion, I would like to express my great gratitude and thanks to FAO, AADGN, IPB, Directorate General of Livestock Services and Animal Health, Ministry of Agriculture, Republic of Indonesia, Ministry Coordinating Economic Affairs, Bank BRI, Mayor of Bogor City, PT Napindo, PT Chiel Jedang, PT Nutreco, and PT Yummi Indonesia that support and sponsor this conference.

Thank you very much to all VIP reviewers from international advisory and scientific committee, and also for hard working of all organizing committee.

Please enjoy the beauty of Bogor City with the legend of Bogor presidential palace and botanical garden.

Wassalamualaikum wr.wb.

Prof. Dr. Dewi Apri Astuti, MS
Chairperson
The 2nd AADGC 2014
25 April 2014

Ladies and Gentlemen,

The Asian-Australasian Dairy Goat Network (AADGN) was formed by a group of researchers and producers with common interest in dairy goat production during the First Asian Dairy Goat Conference held in Kuala Lumpur, Malaysia in April 2012. The main objective of the network is to facilitate contact among scientists, extension workers, farmers and other stakeholders in the dairy goat industry. In addition, the network hopes to enhance information exchange, provide technical support, and promote dairy goat farming in Asian-Australasian countries and beyond. The secretariat of the network in currently located at the Institute of Tropical Agriculture, Universiti Putra Malaysia (http://aadgn.upm.edu.my/aadgn/) and technically supported by an International Steering Committee and representatives from partner countries, currently made up of Australia, China, India, Indonesia, Iran, Iraq, Japan, Malaysia, Pakistan, the Philippines, Thailand and Vietnam.

One of the activities of AADGN is to organize regular conferences focusing on all aspects of dairy goat research and farming. On behalf of AADGN, I congratulate the Organizing Committee, chaired by Professor Dewi Apri Astuti, for successfully organized the AADGC2014. I was informed that one of the highlights of this conference is the active participation of local dairy goat farmers and producers. It is often reported that the robustness of goats to produce in harsh climatic environment with low quality roughages plays a vital role in food security and poverty alleviation in smallholder farmers in Asia and recently, there is also a growing interest in dairy goat farming as business enterprise in South-east Asia countries including Indonesia to meet the rapid increased demands for goats milk and its products. I trust this conference will provide a good opportunity for exchange of information and experience between the researchers and producers.

Yours sincerely

DR JUAN BOO LIANG
President AADGN
Remarks from Rector of Bogor Agricultural University

Prof. Dr. Juan Boo Liang,
President, Asian-Australasian Dairy Goat Network (AADGN),

Ir. Syukur Iwantoro, MBA
Director General of Livestock and Animal Health-Ministry of Agriculture
Republic of Indonesia,

Dr. Bima Arya
Mayor of Bogor City

Distinguished foreign participants and speakers,

Representative of livestock services officers of local government from all over Indonesia,

Dairy goat farmer and businessman,

Colleagues,

Ladies and gentlemen,

Assalamu’alaikum warahmatullaahi wabarakaatuhu,

A very pleasant and good morning to everyone, thank you very much for joining us at the 2nd Asian-Australasian Dairy Goat Conference (AADGC) 2014. I bid you a very warm welcome to Bogor Agricultural University (IPB) as well as to Bogor City, West Java Province.

I was informed that FAO joined with the University Putra Malaysia (UPM) and the International Dairy Federation (IDF) have organized the First Asia Dairy Goat Conference in Kuala Lumpur, Malaysia from 9 to 12 April 2012. At the same time the Asian-Australian Dairy Goat Network was established. That network is one of the successful indicators of the first conference apart from its important conclusions and recommendations. That conference has also recommended Indonesia to be the host of the Second Asian-Australasian Dairy Goat Conference (AADGC) 2014 with Prof. Dr. Dewi Apri Astuti, one of IPB professors from Faculty of Animal Science to be the country coordinator. We are indeed honored to have you now here with us at IPB. We have about 150 participants from 15 countries gathered here today, making our conference a truly international one.

According to FAO Statistics (2012), Indonesia is ranked 6th in Asia and 10th in the world for total goat population. FAO also reported that Indonesia produced 282,000 ton of fresh goat milk in 2012. Yet, we have no valid data on the number of dairy goat population among the total goat population. Dairy goat farming in Indonesia has been growing fast since about 10 years ago.
The development of dairy goat farming in our country is unique, because it started from community initiative and spread across the nation through their network. The increasing demand of milk and milk products is likely one of the driving force for dairy goat farmer to develop.

If we take our national population as denominator, our milk consumption per capita per year is still very low, it is only 12 liter/capita/year. However, the consumption level in big cities is quite high, that’s why our milk and milk products demand is increasing about 8% per year. Although the major portion of the demand is from cow milk, goat milk and milk products demand is also increase year by year.

As the present conference theme is “The Role of Dairy Goat Industry in Food Security, Sustainable Agriculture Production and Economic Community” it is imperative to discuss alternative solutions to the above challenges by all participants as you are coming from different backgrounds. We have with us today representatives from research centers, universities, businessmen, government officers, students, farmers, and other interested persons. The conference will be more interesting as the organizing committee has set up special session for panel discussion between and among dairy goat farmers, local government livestock services officers, businessman and representative from Directorate General of Livestock and Animal Health, apart from scientific session.

I would like to take this opportunity to express my gratitude the Local Organizing Committee, chaired by Professor Dewi Apri Astuti, and the Dean of Faculty of Animal Science, for their hard work and effort in planning and coordinating this event. I would also like to thank the Directorate General of Livestock and Animal Health, Ministry of Agriculture Republic of Indonesia, Asian-Australasian Dairy Goat Network (AADGN), Food and Agriculture Organization (FAO-RAP), Mayor of Bogor City and Indonesia Association for Sheep and Goat Farmers for their support in making this conference possible.

The challenges made by the Conference are significant, but I am confident that you will succeed in your objectives. I wish you a very pleasant stay here in the IPB and in Bogor, and a productive and successful meeting.

By saying “Bismillaahirrahmaanirraahim…” I declare the Conference open.

Thank you and Wassalamu’alaikum Warahmatullaahi Wabarakaatuhi.

PROF. DR. IR. HERRY SUHARDIYANTO, MSc.
RECTOR, BOGOR AGRICULTURAL UNIVERSITY
Keynote Speaker

The 2nd Asian-Australasian Dairy Goat Conference
April 25-27th, 2014
Bogor-Indonesia
Government Policy on Dairy Goat Development in Indonesia

Syukur Iwantoro
Director General Of Livestock Services And Animal Health
Ministry of Agriculture, Republic of Indonesia

1. Introduction

Increased levels of education of society in Indonesia have an impact on the growing awareness of the importance of nutrition that causes a shift in household consumption patterns towards increased consumption of animal protein such as meat, milk, and eggs. Changes in consumption patterns that accompanies of the increasing of Indonesian population, is leading to major cause of the increase in the rate of domestic demand of livestock products, especially milk. The average growth rate of milk consumption reached 7.0 percent per year - higher than the national growth rate of milk production is only 3.29 percent per year. This means that the amount of milk production is still not sufficient for the milk consumption.

Problems in milk production in Indonesia, which rely only on the production of dairy cows, while some countries producing milk production is supported by non-dairy cow milk production such as dairy buffaloes in South Asia’s countries (India, Pakistan, Bangladesh, Egypt, Italy and Brazil) or goat’s milk, as in the Middle East and Africa as well as horse’s milk in Central Asia.

Indonesia with available resources, has great potential in the development of national dairy. In reality, the majority of fresh milk production in the country (91%) is produced by the smallholder dairy farmers (with the scale 1-3 dairy cows per farmer). The dairy farmer’s scale is less economical considering that the profit can be obtained at least meet economies of scale, ie more than 10 cows per dairy farmer.

On the other hand non-cow dairy farm businesses such as buffalo, goats and horses has not received sufficient attention so that milk production was not recorded in the national milk production. The pattern of non-cow dairy cattle production such as buffalo, horses and goats has its own competitiveness - related dairy products are produced with a more attractive marketing patterns.

2. Dairy Goat Population

In recent years, the number of a dairy goat farms increased significantly. Prior to the 2009 dairy goat farm is still focused on some point, North Sumatra, West Java and Central Java, which are center for dairy goat farmers. Along with the growing interest of Etawa Crossbred (PE) goat types, then almost all of the city/district on the island of Java, as well as the island of Sumatra on average raise this type of goat. Most of goat farmers are accustomed to PE goats for milk and meat production. More exciting from this small ruminants is the high price of milk produced starting from Rp 15,000 to Rp 60,000 per liter. It is caused by a variety of properties of goat milk that are trusted by society to cure some diseases.
According to data from the Directorate General of Livestock and Animal Health, in 2007 the population of goat is 114.470 million heads, in 2008 rose to 15.147 million heads, in 2009 increased by 15.858 million heads, in 2010 to 16.619 million heads and in 2011 its population is 16.946 million heads, in 2012 goat population is 17.862 heads and in 2013 population reaches 18,576 million heads of goat. The growth of goat population is very significant, but the question generate from the data whether the population of goat raised by farmers are goat for milk or meat?

In fact, from the field shows that the goats are kept mostly are local type (kacang goat) and the rest are PE goats. Unfortunately, there are no separate figures of populations of PE goats and local goat. At least the presence of goats as one of ‘saving lives’ for the people who are in rural areas, have been able to fill the economic network and increase the level of economic welfare. Production of goat milk is not recorded properly, but goat milk production centers is recorded in West Java: Bogor, Sukabumi and Cianjur. While in Central Java in Purworejo, Wonosobo, Banjar Negara, Tegal, Semarang and Kendal. In East Java, milk goat centers is in the district of Malang, Lumajang and Pasuruan. Dairy goat farm is now growing and developing in West Sumatra as in Tanah Datar, Padang Panjang; North Sumatra in Medan and Deli Serdang; Riau and Lampung Province

3. The Common Types of Dairy Goats

Types of goats are kept as dairy goat by farmers in Central Java, East Java and Sumatra are the goats Peranakan Etawa (PE)/Etawa Crossbred, Senduro and Java Randu. In West Java, many breeders use types or cross-bred Saanen goats known as Sapera ( Sannen Peranakan Etawa and Rambon).

This type of female goats/does reach sexual maturity at the age of 8-9 months. The gestation period is 5 months and 4 months for lactation period. With good management, dairy goats can be mated and fertile 2-3 months after kids delivery. Goats is able to deliver 2-3 heads of kids, so that within two years can produce 6-9 head of kids. Dairy goat carcass weight is about 20-30 kg for buck and 15-20 kg for doe. The fertile period for does last until 5 years old.

Theoretically, dairy goats can reproduce 3-6 kids every two years. Dairy goat reproduction is also influenced by the adequate of nutritional feed levels. Dairy goat requires 60 % of grasses and leaves 40 % for their feeding. In addition to grass and forage, goats also require additional concentrate such as bran, soybean meal or cassava mash (onggok). In addition, it may be necessary to add fish oil as vitamins, minerals, or salts. With a good feed intake the lactation period for dairy does can continue up to 12 months.

Dairy goat milk productivity at farmer level is below 2 liters / head / day. This is partly due to lack of good quality, cheap and continues availability of forage. High quality forage is needed as the primary feed source that can reduce the cost of feed, as a result of reducing the use of high price concentrate. Dairy goat operation in Indonesia generally are kept in traditional way, placed in the back yard or around the house, and animals kept in a small number. Simple houses are made from bamboo material with roof from tiles or wood, reeds or asbestos.
There is only few farmers who keep on large-scale dairy goat, which is caused by the lack of knowledge community for dairy goat operation, and lack capital for dairy goat farming. The increasing demand for domestic milk due to increased purchasing power and consumption patterns is a challenge for the government to increase production both in terms of quantity and quality.

4. Dairy Goat Development Policy

The development of PE goat as milk producer is to increase the goat population, production and productivity. That will be able to overcome the problem of inadequate of domestic milk supply, to meet national needs through government programs. Domestic fresh milk production only meet 23% of the national requirement, and the production centers is still concentrated in Java as 91% of domestic production. Milk production may be regarded as wholly or predominantly of dairy cows, however milk is not only produced from dairy cattle, but also can be produced from dairy goat which is quite a lot number in Indonesia and can be developed to increase the population, production and productivity through government facilitation.

Goat’s milk is not as popular as cow’s milk, but on the other hand goat’s milk is needed by the growing popularity of conscious consumption patterns for natural products (organic). Currently marketing goat milk is a great opportunity to develop. The demand of fresh goat’s milk as part of the healing of some diseases, and to maintain health has been widely demanded significantly. In addition to milk, goat can produce other products into profit opportunities, such as selling goat kid and dirt that can be used as compost (fertilizer).

Dairy goat farm business is mostly kept by small farmers is very likely as a vehicle for generating income of small farmers in rural communities. This success story of goat farming has shown positive results in some areas, so that it is potentially used as a national program to improve the nutritional status and economic capacity of rural communities.

Dairy goats farming that will be developed are committed in accordance with the government’s objectives of economic development of pro-poor, pro-job, pro-growth, pro-health and pro-environment. With triple track the government’s economic development, the development of dairy farming in general is to improve the management of dairy cattle in the community, improve economies of scale dairy goat business and expanding domestic business in producing fresh milk, to increase milk production centers both in Java and outside Java.

Constraints that occur in dairy goat farmers in Indonesia today is the low ability of farmers to produce good milk of goat in terms of quantity and quality. Therefore, the government needs to provide guidance, counseling, and training to improve the knowledge of farmers in order to increase the productivity of dairy goats.

Government develop dairy goats breeding to provide high quality/superior seeds of does and bucks. Superior buck can be obtained from the result of selection in livestock population group of Village Breeding Centre (VBC) or from accredited breeding centers. Frozen semen from superior buck can be accumulated and processed as frozen semen to be able to inseminate large amount of females. The semen process is done by the Technical Services Unit as government-owned Center for Artificial Insemination Center (BBIB) Singosari, and Artificial Insemination
Center (BIB) Lembang. However, the application of artificial insemination in dairy goats on small farmers are still at the stage of introduction.

For the average low scale dairy goat operation in Indonesia, to feed the animals require the development of small-scale and more economical feed mills. This small-scale feed mills (mini feed mill) are expected to provide green feed, concentrate and raw materials feed other than the forage. In order to develop the future of dairy goats should be emphasized that the operation/management should be integrated with the establishment of small-scale feed mills. Establishment of mini feedmill will be able to overcome the scarcity of feed that occur in certain seasons, for example the long dry season.

Animal health handling of is one key element of the success of dairy goat business. There are some goat diseases that influence the production of dairy goat such as mastitis, scabies and bloat. The government has facilitated animal health handling that comes from adequate veterinary services either by officers or functional medical veterinary, veterinary paramedic, pregnancy examiner, assistant reproductive technique and inseminator who know about animal health handling in the field.

Improved safety and quality of the national fresh milk dairy products is made to ensure that products meet quality standards. The activities are conducted through:

4.1 Application of the production guideline and handling of milk hygiene
4.2 Facilitate the provision of the facility of production and handling of fresh milk
4.3 Application of Good Handling Practices / GHP and SOPs
4.4 Preparation of reward and punishment system
4.5 Reduction of zoonoses (brucellosis and tuberculosis).

Communication, information and education for fresh milk consumption is made to increase the consumption of fresh milk by the public, especially school-age children. To encourage the habit of drinking goat’s milk is needed continues counseling and education and integrated with various related agencies. Operational activities include the promotion; socialization of drinking milk (Milk Campaign); coordinate with others, especially the Ministry of Education, Ministry of Youth and Sports, Health, Trade and Industri; promotion through print and electronic media; and coordination with the Provincial Government / District / City.

In order to make the increasing of farmers capacity building and the dairy business scale more effective and efficient, it is necessary to empower dairy farmer group under cooperative institution. The institution is expected to be the smallest unit in doing some activities such as the coordination of livestock identification, technical service production facilities, technical services reproduction (Artificial Insemination, Gestation/pregnancy Examiner, medical reproduction), animal health technical services (vaccinations and other treatments), the application of hygiene and sanitation, information and capital accesss, harvest, post-harvest and processing of milk handling, as well as the implementation of the recording system in the dairy farm.
5. References


Development of Micro Finance Institutions Model in The Rural Farmer Groups to Support Sustainable Agribusiness of Dairy Goats: A Pilot Study

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Abstract The purpose of this study was to develop a MFIs model to support sustainable agribusiness of dairy goats with a pilot study in Ngudi Makmur group in Sleman Regency of Yogyakarta. Method of RRA was used in this research and continued mentoring and coaching to the target groups. The materials of the research was a capital to start MFIs activity of IDR. 15 million in the form revolving of funds as a loan. The interest of loan at 1.5%/month including for the cost of mentoring/coaching (0.3%) and to the capital increase of MFIs (1.2%). Descriptive analysis was used to determine there are the development of MFIs by measuring the increase of productive activity and revolving funds in the farmer group. The results of this research showed that most demand of fund (68.20%) in MFIs was used for productive activity so that there was the capital increase in the group. The building of the MFIs in the group can made a sustainable agribusiness of dairy goat. Behavior of farmers become more responsible towards the use of funds, measured from the smooth of loan repayment and installment.

Keywords Micro finance institutions, Sustainable agribusiness, Dairy goats

1. Introduction

Almost all of dairy goats in Indonesia was maintained by farmers in rural areas with small-scale 2-5 heads and they have limited of capital. Generally the condition in the rural animal farming was a business that not yet completely commercial, farmers regard that livestock as a saving which can be sold by farm families at any time to meet the family needs because of farm household faced by financial constraints [4].

Dairy goat produce milk of high nutritional value and its price was about 3 times higher than the milk of dairy cows, indicating that the milk supply of dairy goat was still low compared to the demand, so that there was a market opportunities. Therefore, the development of dairy goat was very strategic effort to empower for rural communities to encourage rural economic growth. Development of smallholder farmers to be an agribusiness was expected can be increase of production, but they need additional of capital. In the agribusiness system, capital support was needed to finance the procurement of input or production factor, implementation of on farm, processing and marketing [3]. However, until now to start and develop the small enterprises including dairy goat farming faced with difficulties in accessing funds or capital from the formal commercial banks, so the growth of microfinance institution (MFIs) can facilitate access to get funds and grow the ideas to create productive activity in rural communities which can empower small enterprises in rural areas [2]. Recognizing this problem, the Agriculture Ministry of Indonesia began in 2008 has been implementing Rural Agribusiness Development Program (RADP) in the form of venture capital which was given as “Bantuan Langsung Mandiri/BLM” as much as IDR100 million and managed by Farmers...
Group (Gapoktan). Based on results of the research in [1] state that the program RADP have not shown satisfactory results but still needs some improvement, especially human resources knowledge and technologies innovation at specific location. The purpose of this study was to develop a MFIs model to support sustainable agribusiness of dairy goats in terms increase of the capital and activity in the group with pilot study in Ngudi Makmur farmer group in Sleman Regency of Yogyakarta.

2. Materials and Methods

A pilot study was conducted deliberately in dairy goat farmers group of Ngudi Makmur in Sleman Yogyakarta with consideration of the group affected by the eruption of Merapi Mount in 2010 so that the necessary capital to support in rebuilding dairy goat farming. The method to develop of MFIs started with Rapid Rural Appraisal (RRA) to the target groups to ensure the group has a desire to grow and understand the MFIs. Further development model of MFIs was modification that has been developed by [5] namely the provision of a number of start-up capital to the farmer groups which it to be the revolving of fund among its members to finance their productive activities with the responsibility give interest to the group so that can increase of capital in the group. Thus the group has the ability to finance its business independently, the members can access easier to get capital as well as educate the livestock farmer to do business by calculating the cost of using money. The model of MFIs development in detail was shown in Figure 1.

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**Figure 1. Development model of MFIs to support sustainable agribusiness dairy goats**

Analysis of this study conducted descriptively by measuring the increase of capital and productive activity in the farmer group.
3. Results and Discussion

The target group has a number of members of 35 farmers, but at the time members who have a productive goat which produce of milk was 23 farmers. The total population of dairy goats in groups of 162 heads and milk production about 40-60 liters/day, the milk price about IDR 15,000 up to 16,000/liter. The group members were easy in milk marketing, but based on the results of testing the quality of milk still needed for improvement through the adoption of technology, such as the method of milking hygiene and carry on good farming practices. Besides as a goat farmer, the members of the group were farmers of various woods (62%), 18% as laborers and the remaining as small traders and others.

Development of MFIs by the research team began in April 2013, then carried out stages of building the MFIs model as illustrated in Figure 1. The provision of start-up capital to the MFIs as much IDR 15 million in May 2013 and started revolving of funds to the group members. The agreement by members as the fund user of MFIs was loan installments every month and a maximum of 10 months installment with interest service was 1.5% / month follow flat rate system where 0.3% used to cost of guidance activities and 1.2% for MFIs to raise capital. Activity of loan and installment in the group was conducted every month on the 15th as routine meeting of the farmer group. The installment of every month rolled back to the other members, and so on so that the MFI capital continues to grow. Activities of fund revolving were carried out until the month of January 2014 there were 9 times with 21 borrowers. Average loans of IDR 1,100 000/member, with the ability to repay 5 times, which means the ability to pay installments faster than the maximum limit of 10 months. The reason they are paying more quickly was that other members in the group soon have the opportunity to borrow. The use of the loan funds by 50% to support the dairy goat business that is to buy feed, repair of stall/equipment and to buy a goat, 18.20% for other productive activities such as a small trading and 31.80% to support household consumption.

4. Conclusion

According to these results can be concluded that most of the demand of fund (68.20%) was used for productive activities, so that the development of the MFIs in the rural can made a sustainable agribusiness. Behavior of farmers become more responsible towards the use of operating funds, measured from the smooth of installment of loans. The MFIs model can be developed to other groups that have productive activity and desires to expand its business.

5. References


Certificate

is presented to

Dr. Ir. Rini Widiati, MS

for active contribution as presenter

The 2nd Asian-Australasian Dairy Goat Conference
Bogor, April 25-27th, 2014

Chairperson, AADGC 2014
Prof. Dr. Dewi Aprti Astuti, MS