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"Small and Medium-sized
Enterprises Competitiveness"

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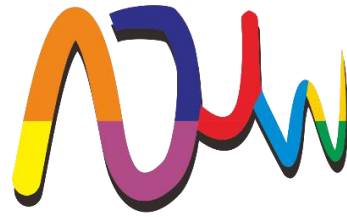
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AGRIBUSINESS
DEVELOPMENT FOR
HUMAN WELFARE

*“Small and Medium-sized
Enterprises Competitiveness”*



Agribusiness Development
for Human Welfare

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EDITOR FOREWORD

The economic integrations by ASEAN certainly have given a major influence on Small and Medium-sized Enterprises (SMEs). Beside economic integration in the form of free trade area (FTA) that has been going on since the early 2000s, economic integration in the form of ASEAN Economic Community (AEC) has been ongoing since the beginning of 2016. Through this integration, SMEs have opportunity to expand access to markets, technology, and capital. But at the same time SMEs are required to improve their competitiveness in order to survive in the market.

In order to explore ideas, concept, and innovations related to the competitiveness of SMEs, International Conference on Agribusiness Development for Human Welfare (ADHW 2016) was held in Yogyakarta on May 14, 2016. The conference organized by Department of Agribusiness Universitas Muhammadiyah Yogyakarta, in collaboration with Department of Agribusiness and Information System Universiti Putra Malaysia, Department of Agro-Industrial Technology Kasetsart University, Department of Agriculture Socio-Economics Universitas Gadjah Mada, Department of Agriculture Socio-Economics of Universitas Brawijaya, Indonesian Society of Agriculture Economics, Agribusiness Association of Indonesia. Hopefully proceedings of ADHW 2016 provide stimulus for increasing competitiveness of SMEs in ASEAN, especially in Indonesia.

Furthermore, we are grateful to Allah, the Sustainer of all word, who always makes it easy for our affairs. We would like to acknowledge with thanks to all the institution and individual who joined with resources and efforts in organizing the conference that resulted in the papers which are published in this proceeding. Special thanks to all authors and discussants who contributed with their intellectual capital and responded to our call papers. Thanks and acknowledgment are also due to all reviewers of the conference who helped in evaluating submitted papers; and to the members of the Organization Committee, who ensured smooth execution of the event.

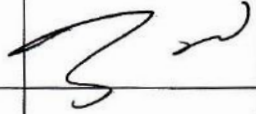
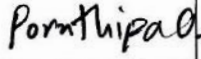


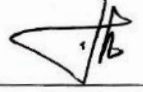

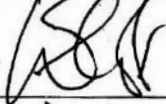
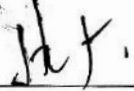
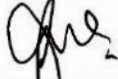

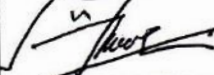
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PREFACE

Assalaamualaikum, Warahmatullaahi., Wabarakaatuh.
Dear Honorable Governor of Yogyakarta Special Province
Dear respectable Prof. Dr. Zainal Abidin Mohamed
Dear respectable Asist. Prof. Pornthipa Ongkunaruk
Dear respectable Rector of UMY Prof. Dr. Bambang Cipto, MA.
Dear all invited Guests, Speakers, and Participants of International seminar of ADHW 2016.

Alhamdulillah, all praise be to the Almighty God, so that we can be gathering here today at Muhammadiyah University of Yogyakarta in order to attend the Conference on Agribusiness Development for Human Welfare (ADHW) 2016.

Ladies and Gentlemen,

On behalf of the committee, I would like to say welcome to this International Conference on ADHW 2016 and thank you for attending our invitation.

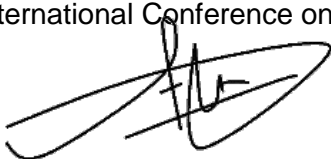
Especially, we are grateful to invited speakers, Prof. Zainal Abidin Mohamed and Asist. Prof. Pornthipa Ongkunaruk, for their willingness to share information and thoughts in this conference. As a bit report, that this conference has been attended by 85 speakers coming from five countries.

This conference entitled "Small and Medium-sized Enterprise Competitiveness". ASEAN Economic Community is the largest economic integration that is going to be implemented at the beginning of 2016 (December 31, 2015). Through this integration, SMEs will have opportunity to expand access to markets, technology, and capital. But at the same time SMEs are required to improve their competitiveness in order to survive in the market. We expect that this seminar is capable of producing thoughts building SMEs within ASEAN, especially Indonesia, to face the free trade.

This event can be done by support and efforts from all sides. Therefore, I would like to say thank you to all committee members having worked hard to conduct this event. We, as the organizer committee, do apologize when there is a shortage in conducting this event.

Wassalamualaikum, Warahmatullaahi., Wabarakaatuh.

Chairman
International Conference on ADHW 2016



Dr. Aris Slamet Widodo, SP., MSc.

WORDS OF WELCOME

Assalamu'alaikum warahmatullahi wabarakatuh

Alhamdulillah, all praise be to Allah SWT, who has given us His blessings so that this International Seminar of Agribusiness Development for Human Welfare (ADHW) 2016 entitled "Small and Medium-sized Enterprises Competitiveness" can be conducted. This International Conference is held in cooperation among Agribusiness Study Program of Muhammadiyah University of Yogyakarta with Putra University of Malaysia (UPM), Kasetsart University (KU), Association of Indonesian Agricultural Economy (PERHEPI), and Agribusiness Association of Indonesia (AAI), Universitas Gadjah Mada (UGM) and Universitas Brawijaya (UB).

Countries of ASEAN members like Indonesia, Malaysia, and Thailand have more than 90% Small and Medium-sized Enterprises (SMEs). In general, SMEs play important role in economic developments such as in terms of employment, added value, improve foreign exchange, and economic growth. For Indonesia, the role of SMEs is limited to employment and added value, while the foreign exchange from SMEs is still low. According to the General Director of SMEs of Industrial Ministry, in 2013 the total SMEs being able to pass through export market is just under 5 percent. For that required many breakthrough and innovation so that the role of SMEs becomes real economic development, especially in Indonesia, and generally in ASEAN countries.

On behalf of Agribusiness Department of Universitas Muhammadiyah Yogyakarta, we would like to express our gratitude Putra University of Malaysia (UPM), Kasetsart University (KU), Association of Indonesian Agricultural Economy (PERHEPI), Agribusiness Association of Indonesia (AAI), Universitas Gadjah Mada (UGM) and Universitas Brawijaya (UB) for all supports, sponsors, and all committee members having worked so hard that this International Conference can be conducted.

Hopefully, these synergies coming from various parties can provide contribution for developing SMEs in Indonesia and other ASEAN countries as well.

Wassalamu'alaikum warahmatullahi wabarakatuh

Head of Agribusiness Department
Universitas Muhammadiyah Yogyakarta



Ir. Eni Istiyanti, MP.



Gubernur

Daerah Istimewa Yogyakarta

Sambutan

KONFERENSI INTERNASIONAL

“*AGRIBUSINESS DEVELOPMENT FOR HUMAN WELFARE*”

Yogyakarta, 14 Mei 2016

Assalamu'alaikum Wr. Wb.

Salam sejahtera untuk kita semua.

Yang Saya hormati :

- Rektor Universitas Muhammadiyah Yogyakarta;
- Para Narasumber;
- Hadirin dan Para Peserta yang berbahagia,

Puji dan syukur marilah kita panjatkan kehadirat Allah SWT karena hanya atas limpahan rahmat serta karunia-Nya, kita dapat hadir pada kesempatan acara **Konferensi Internasional “*Agribusiness Development For Human Welfare*”** ini dalam keadaan sehat wal’afiat.

Pada kesempatan kali ini, secara ringkas Saya akan menyampaikan mengenai industri kecil menengah nasional yang menjadi tema pada pembukaan Seminar Internasional “*Agribusiness Development For Human Welfare*” ini.

Hadirin dan Saudara-saudara sekalian yang Saya hormati,

Berdasarkan data BPS, pertumbuhan industri pengolahan nonmigas pada tahun 2015 secara kumulatif sebesar 5,04%; lebih tinggi dari pertumbuhan ekonomi (PDB) pada periode yang sama sebesar 4,79%. Pada periode Januari-Desember 2015, nilai ekspor produk industri pengolahan nonmigas mencapai USD 106,63 Milyar, dan nilai impor mencapai USD 108,95 milyar, sehingga neraca perdagangan industri pengolahan nonmigas pada periode yang sama sebesar USD 2,32 milyar (neraca defisit).

Usaha pemerintah untuk memperkecil defisit di atas, salah satunya dengan cara memberdayakan Industri Kecil dan Menengah (IKM) yang merupakan bagian penting dalam perkembangan industri nasional. Sampai saat ini, Industri Kecil dan Menengah

telah berkontribusi sebesar 34,82% terhadap pertumbuhan industri pengolahan nonmigas secara keseluruhan.

Angka ini dapat tercapai karena dukungan lebih kurang 3,6 juta unit usaha, yang merupakan 90 persen dari total unit usaha insutri nasional. Jumlah unit usaha tersebut telah mampu menyerap tenaga kerja sebesar 8,7 juta orang, yang tentunya berdampak pada meningkatnya ekonomi nasional serta mengurangi kemiskinan.

Industri Kecil dan Menengah (IKM) memiliki peran yang strategis dalam perekonomian nasional. Hal ini sejalan dengan Visi Pemerintah dalam Rencana Pembangunan Nasional Jangka Menengah (RPJMN) 2015-2019 yaitu *“Terwujudnya Indonesia yang berdaulat, mandiri, dan berkepribadian berlandaskan gotong royong”*.

Untuk lebih meningkatkan peran tersebut, Penumbuhan dan Pengembangan Industri Kecil dan Menengah diarahkan untuk memiliki tujuan jangka menengah guna mewujudkan industri kecil dan industri menengah yang berdaya saing, berperan signifikan dalam penguatan struktur industri nasional, pengentasan kemiskinan dan perluasan kesempatan kerja, serta menghasilkan barang dan/atau jasa Industri untuk keperluan ekspor.

Hadirin dan Saudara-saudara sekalian,

Awal tahun ini, kita telah memasuki era Masyarakat Ekonomi ASEAN (MEA). Dengan demikian, perekonomian nasional akan langsung bersaing dengan para pelaku pasar di kawasan ASEAN. Produk dan jasa termasuk investasi negara-negara anggota telas bebas memasuki pasar di kawasan ASEAN.

Dalam rangka menghadapi hal tersebut, Pemerintah mengambil langkah-langkah strategis berupa peningkatan daya saing industri dan mendorong investasi di sektor industri; di mana peningkatan daya saing industri itu sendiri dilakukan melalui penguatan struktur industri dengan melengkapi struktur industri yang masih kosong serta menyiapkan strategi ofensif dan defensif dalam akses pasar.

Pemerintah telah melakukan Penguatan Sektor IKM dengan strategi ofensif dan defensifnya melalui beberapa program pelaksanaan, diantaranya antara lain: Penumbuhan Wirausaha Baru; Pengembangan IKM melalui Pengembangan Produk IKM serta Peningkatan Kemampuan Sentra dan UPT; Pemberian Bantuan Mesin dan Peralatan Produksi; Perluasan Akses Pasar melalui Promosi dan Pameran; Fasilitasi Pendaftaran Hak Kekayaan Intelektual; Fasilitasi Sertifikasi Mutu Produk dan Kemasan; serta Fasilitasi Pembiayaan melalui Skema Kredit Usaha Rakyat (KUR).

Saya berharap agar berbagai program-program pemerintah tersebut dapat didukung secara sinergis oleh seluruh komponen masyarakat. Untuk itu, Saya berpesan kepada Saudara-saudara sekalian agar semua program pemerintah dalam bidang

Industri, khususnya dalam program pemberdayaan Industri Kecil dan Menengah, didukung dengan sepenuh hati, agar dapat lebih bermanfaat bagi masyarakat dalam rangka pengembangan industri kecil menengah.

Hadirin dan Saudara-saudara sekalian yang Saya hormati,

Demikian beberapa hal yang dapat Saya sampaikan. Akhirnya dengan memohon ridho Allah Subhanahu Wata'ala, seraya mengucap "*Bismilahirrahmanirrahim*", **Konferensi Internasional "Agribusiness Development For Human Welfare"** dengan ini secara resmi Saya nyatakan dibuka. Semoga Allah SWT memberikan petunjuk, bimbingan, perlindungan dan kemudahan dalam setiap langkah dan upaya kita. Amien.

Sekian dan terima kasih.

Wassalamu'alaikum Wr. Wb.

Yogyakarta, 14 Mei 2016
GUBERNUR
DAERAH ISTIMEWA YOGYAKARTA



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THE FARMER'S KNOWLEDGE AND ATTITUDES FOR ENVIRONMENTAL FRIENDLY OF SHALLOT CULTIVATION IN BALI

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ABSTRACT

Bali Provincial Government has committed for developing environmental friendly agriculture, including shallot cultivation, however, at the field level using of synthetic pesticides to control pests and diseases was very intensive and less wise. It can be thought to have a negative impact on health and the environment. This study aimed to analyze the farmer's knowledge and attitudes on environmental friendly of shallot cultivation technology. The study was conducted in Kintamani District, Bangli Regency in March to December, 2015. The location and 65 farmers as samples are determined by purposive with considerations: (1) Kintamani district as a location of the shallot area development program, (2) Kintamani district as a center for the production of shallot in Bali, and (3) the farmers who as samples are executor of the program. Data were collected before and after assistance providing by questionnaires. The analysis showed that the farmer's knowledge and attitude on environmental friendly of shallot cultivation technology increased after assistance providing.

Keywords: knowledge, attitude, shallot cultivation, environmental friendly

INTRODUCTION

Shallot (*Allium ascalonicum* L.) is a vegetable crop that has a high economic value and can be planted in the lowlands and highlands. This commodity is always needed by the consumer households, restaurants, hotels, and food processing industries as complementary spices. Shallot farming development aimed for improving the quantity and quality of production and the increase in income and welfare of farmers. Bangli Regency, Kintamani District in particular, is the largest shallot producer area in Bali. Its contribution to the total production of shallot in Bali 93.70% per year (BPS Bali, 2015). Shallot cultivation is done almost throughout the year with diversified patterns with tomatoes, red chili, and cabbage.

The pests and diseases of shallot quite numerous and varied (Basuki et al. 1997; Udiarto et al., 2005; Setiawati et al. 2007; Sumarni and Hidayat, 2005; and Anonymous, 2014) as a very serious constraints faced by farmers. The pests and diseases can lead to loss about 30-

100% of shallot production (Kardinan, 2002 and Udiarto, 2005). Generally, farmers control with synthetic pesticides, which tend to be excessive, is not exactly of the type, dose, and time of application. The using of synthetic pesticides are ineffective, wasteful and high production cost, the pests have become resistant to pest attack can cause an explosion at a later, the destruction of natural enemies, also have an impact on farmer's health, environmental pollution, and shallot product unhealthy because they contain pesticide residues.

Bali province was established as one of the provinces who implementation the Shallot Area Development Program, since 2015. Related of the program, then the Assessment of Institute for Agricultural Technology of Bali has been doing assistance to the shallot farmers. Bali Province Government has committed to develop environmental friendly of shallot cultivation with integrated pest management approach that oriented aspects of high productivity, efficiency, safety, and conservation of natural

resources and the environment. According Pasetriyani (2010), integrated pest control is a concept of environmental friendly pest control which is trying to encourage the involvement of the natural enemies. The approach includes technical culture, which include: the type and nature of the soil, timing of planting, use of resistant varieties, use of tuber quality seeds, well tillage, balanced fertilization, spacing, control of plant pests, and harvest and postharvest. This study aimed to analyze the farmer's knowledge and attitudes towards technology of environmental friendly shallot cultivation with integrated pest management approach.

METHOD

This research was conducted in March to December 2015 in the district of Kintamani, Bangli regency, with consideration of: (1) Kintamani District is a center for the production of shallot, and (2) Kintamani District has been designated as Area Development Shallot Program. The number of respondents 65 farmers are determined by purposive, because they are implementing the program.

Data were collected by a pre-test and post-test using a list of questions in each field of school operations and regular meetings. The list of questions includes: (1) land preparation and tillage, (2) the using of tuber quality seed, (3) fertilization, (4) the pest control, (5) field sanitation well, (6) irrigation/watering, and (7) harvest and post-harvest. Analysis of data by simple statistics, scoring and qualitative interpretation of the answers raised by the respondents. Measuring the farmer's knowledge used the data rate in the range of 0-100. The type of question is a multiple choice questionnaire as many as 25 pieces. If any question is answered correctly the value 4, but if either the value 0. If all of questions answered correctly value is 100, whereas if all the wrong value is 0. The level of farmer's knowledge can be divided into five categories, namely: (1) grades 0-20 = very low; (2) 21-40 = low; (3) 41-60 = moderate; (4) 61-80 = high; and (5) 81-100 = very high. The

measurement of farmer' attitude did by scoring. Number of questions/statements contained in the questionnaire as many as 25 pieces. Answers are provided on each question / statement are: a. disagree; b. doubtful; and c. agree. Answer "disagree" = 1; "doubtful" = 2; and "agree" = 3, so that the total score ranges from 25-75. Scores earned on each item the question /statement summed to obtain a total score which is categorized into three classes, using the formula interval (Dajan, 1996):

$$I = \frac{J}{K}$$

Where:

I = Interval class; J = distance score of minimum and maximum; and K = Number of classes used

RESULTS AND DISCUSSION

The Farmer's Knowledge

Knowledge is the result of the sensing to a particular object. Most of human's knowledge is obtained by the eyes and ears. Knowledge is very important domain to give perceptions which in turn form the attitudes and behavior/actions. One's knowledge of an object consists of two aspects, positive and negative aspects which will determine the attitude and actions. The more positive aspects of an object is known, it will cause more positive attitude towards the object.

The analysis results shows (Table 1) that, before having assistance most of farmers (49.23%) had knowledge of the technology of environmental friendly of shallot cultivation in medium category, with an average value of 53.74. After assistance the majority of farmers (73.85%) have a high knowledge, with an average value of 71.35 and nothing farmer who has low knowledge. The number of farmers who have very high knowledge after the assistance providing also increased by six-times, from one person before assistance providing to seven people after assistance providing.

Table 1. The results of Pre and Post Test of Farmer's Knowledge on Environmental Friendly of Shallot Cultivation

Classification/scores	Before the assistance			After the assistance		
	Average	Number of farmer	Percentage	Average	Number of farmer	Percentage
Very low (0 - 20)	16,00	2	3,08	-	0	0,00
Low (21 - 40)	39,33	5	7,69	-	0	0,00
Moderate (41 -60)	53,74	32	49,23	56,31	10	15,38
High (61 - 80)	70,65	25	38,46	71.35	48	73,85
Very high (81 - 100)	82,00	1	1,54	89,44	7	10,77
Amount		65	100,00		65	100,00

Source: Primary Data (analyzed)

The pre-test results indicated that, farmers in the location of assistance have enough knowledge about environmental friendly of shallot cultivation. The site selecting of shallot planting is the most understandable aspects by the farmers well. All of the farmers have understood that shallot requires maximum sunlight during in the crop. They have tried to clean the parts that may block the incoming sunlight to planting shallot. There are some things that have not been well understood by farmers can be in onion cultivation, namely:

1. The using of seed tubers

Selection of bulbs that will be used as seed, farmers are already doing quite well with the selection, choose bulbs are solid, medium-sized, healthy, no wrinkles, no defects. However, farmers do not understand the shelf life of the bulbs are good for seedlings. Most of the farmers use seed tubers are stored for 30-50 days after harvesting. At the age of its shelf, shallot shoots candidates still in the inside of the bulb, is not at the end of the bulb, so the emergence of shoots in the crop relatively long. These conditions will also affect many tubers rot before sprout, especially farmers almost never cut the tip of seed tubers. Sumarni and Hidayat (2005) and Setiawati et al. (2007) suggest using seed tubers that have been stored 2-4 months and shoots already at the end of the tuber.

2. Tillage

Farmers have made quite a good seedbed, from the aspect of lanes

(Eastern-Western) or according to the conditions of each area, the width (100-120 cm), height (30-40 cm), and width of trench about 40 cm. Farmers are already anticipating the occurrence of tuber rot due to waterlogging. The aspect that has not understood by farmers is the time gap tillage and planting shallot bulbs. The farmers are not doing tillage well and properly. They usually do tillage approximately seven days before planting. Some things that might happen if tillage is not perfect, namely: less fertile soil, good drainage and aeration less, and yet clean of weeds and plant debris. All of the farmers have not used dolomite, because they are not known yet. Planting paddy and vegetables an intensive that will trigger soil becomes acidic (low pH). The results showed, the soil at the site assistance has a pH of 4-5 (sour). These conditions will have an impact on growth, and productivity of shallot is not optimal. Sumarni and Hidayat (2005) and Setiawati et al. (2007) suggest tillage should be performed 3-4 weeks before planting to obtain good soil conditions for planting. Acidic soils (pH <5.6) to be given the dolomite of 1 - 1.5 tons/ha to increase the availability of nutrients Ca and Mg as well as the impact on the increase in fresh and dry tuber weight.

3. Setting a spacing

Farmers applying shallot plant spacing of 25 cm x 25 cm, so the relatively small populations of plants on a unit area. This could have an impact on

production gained not maximum. They assume that the wider spacing impact to bigger tuber and shallot production higher per unit area. The optimal spacing for shallot crop is recommended 15cm x 15cm or 20cm x 15cm (Hidayat and Rosliani 2003 and Sumarni et al., 2012).

4. Fertilization

Knowledge of farmers on fertilizer shallot crop is still relatively low. Fertilization using chicken manure, urea, ZA, and NPK. Its composition is not as recommended, is dominated by nitrogen (N). The using of fresh chicken manure have caused air pollution and trigger an increase in the fly population. That can have a negative impact on comfort and health.

5. Controlling of pests and diseases

It seems that the use of synthetic pesticides is the only way that farmers in controlling pests and plant diseases of shallot. Its use is very intensive and less precise in terms of aspects dose, type, timing, and frequency of application. Almost all of the farmers did not make observations prior to pest and disease control. They also cannot distinguish between insecticides and fungicides. In use, the two types of pesticides are often blended into one. Control of pests by pesticides carried out 2-3 times a week, regardless of the symptoms and the level of attack, with the dose, type, timing, and the target is not appropriate. This reflects the ineffective control and avoid waste impacting the high production costs, health, and environmental pollution.

6. Watering

Watering shallot crop has done fairly well by the farmers, but has not as recommended. Watering is done one times every day. At the rainy season, farmers are not doing the watering because they think do not need watering. According Sumarna (1992), a way of watering the shallot crop are (1) at the age of 0-5 days after planting watering is done 2 times a day (morning and afternoon), so that the

soil moist enough to stimulate the growth of shoots, (2) at the age of 26-50 days after planting (tuber formation phase), shallot plants require a lot of water, so watering is done two times in the morning and evening, and (3) at the age of 51- 60 days after planting (tuber maturation phase) watering only once a day, at noon to speed up harvesting. Setiawati et al. (2007) state that, in the rainy season also watering to clean the leaves of plants, from splashing soil attached to the leaves of shallot. Watering in the morning is aimed to clean plant of moisture and suppress disease.

7. Harvest and postharvest

Technically, harvest and post-harvest handling is quite good, but there are still some deficiencies. There are still many farmers who harvest shallot is not timely, the leaves of the plant are still mostly green, especially at times when onion prices are quite high. This condition affects the quality and quantity of shallot production, because the tuber formation is not maximized. Post-harvest handling is quite good, but there are still shortcomings, which have not done drying by sunlight. Generally, shallot recently completed harvest, tied the leaves, and directly in place in the warehouse. This condition can also affect tuber infection of pests and diseases is still attached to the tubers. Sumarni and Hidayat (2005) and Setiawati et al. (2007) suggest, shallot tubers freshly harvested should be dried in the sun before being stored in the warehouse. Its goal is to minimize pests and diseases attached to the leaves and shallot bulbs that will be stored in the warehouse.

The post-test results (Table 1) shows the farmer's knowledge towards the environmental friendly of shallot cultivation increases after assistance providing. It reflects that, environmental friendly of shallot cultivation technology which are given on assistance providing have been able to be understood by farmers. Based on the test statistics with paired t-test indicated there is a very real

difference between the average value of pre-test and post-test, showed by the t-count = 12.804, while the t-table = 2.655. (t-count > t-table), with $p = 0.000$ ($p < 0.01$). These values reflect that, there are differences in the level of knowledge that is very real to each farmer before and after having assistance. The analysis result reflects the assistance providing is important to improve the knowledge of farmers.

The Farmer's Attitude

Attitude is a response to someone who is still closed to a stimulus or object (Notoatmojo, 1997). Purwanto (1998) states that, the attitude of the views or feelings of individuals with a tendency to act upon the nature/stimulus received from an object. Azwar (2000) argues that, the attitude of the general evaluation made man against himself, another person, an object or issues. The various of restrictions on the attitude it can be concluded that, the manifestation of attitudes cannot be seen directly, but can only be interpreted in advance of behaviors that are closed. Attitude clearly shows their suitability connotation reaction to a stimulus. The analysis results of the farmer's attitude is presented in Table 2.

The results of the pre-test of the farmer's attitude on environmental friendly of shallot cultivation technology (Table 2) shows that, before the assistance providing most of the farmers have a neutral attitude on environmental friendly of shallot cultivation technology that will be introduced in their territories. Only a small proportion of farmers who are positive attitude. That indicates, they have no qualms about applying environmental friendly of shallot cultivation technology as a whole, particularly with respect to the technology component of pests and diseases controlling. The type and number of shallot pests and diseases are very diverse and difficult to control. The farmers assumed that, the use of synthetic pesticides is the one way to control the pest and diseases to get yield. The presumption is expected as a result

of habit or experience that has been done over the years and the lack of adequate extension and assistance. One solution that can be taken to convince farmers of the importance for environmental friendly of shallot cultivation technology is through the field study and intensive assistance.

Based on the post-test results (Table 2) were performed at the end of assistance providing shows that, the total number of farmers who are positively toward environmental friendly of shallot cultivation technology increased by 266.67%, from 6 to 22 people. The number of farmers who have negatively attitude decreased by 46.67% from 15 people to 8 people, but remains dominated (53.85%) by farmers who remain neutral, although the number decreased from 67.69% before having assistance. It can be concluded that, despite the establishment of assistance providing the most of them still have doubts as to apply the environmental friendly of shallot cultivation technology. If it is related with the results of the post-test the farmer's knowledge (Table 1), ideally dominated by a positive attitude, because according Notoatmojo (1997) and Walgito (2003) that, someone who has a good knowledge of an object tends to have a positive attitude towards the object. Based on analysis of farmer's attitude can be stated that, in order to convince the farmers to the environmental friendly of shallot cultivation technology seems insufficient from the aspect of knowledge, but by Azwar (2011) there are other factors that influence a person's attitude, for example: emotional factors, experience personally, the influence of others that are considered important, local customs, etc. Shallot cultivation is done 3-4 times a year by farmers in Kintamani. The high production is acquired by a package of cultivation technology on a particular planting season is not necessarily the same as the production in the next planting season. A technology can be said to be reliable if it can obtain high yields consistently in various situations and conditions.

Table 2. Results of Pre and Post-test Farmer's Attitudes about Environmental Friendly of Shallot Cultivation Technology in The Assistance Location in 2015

Classification/score	Before the assistance			After the assistance		
	Average score	Number of farmer	Percentage	Average score	Number of farmer	Percentage
Negative (25,00 – 41,66)	33,61	15	23,08	40,39	8	12,31
Neutral (41,67 – 58,32)	49,81	44	67,69	51,18	35	53,84
Positive (58,33 – 75,00)	62,72	6	9,23	67,30	22	33,85
Amount		65	100,00		65	100,00

Source: Primary Data (analyzed)

This perception is thought to be one that underlies the differences between farmers who have good knowledge with the attitude of farmers who are still in doubt. Therefore, the procurement of demonstration plots and more intensive assistance in a longer time so require.

CONCLUSION

The farmer's knowledge on environmental friendly of shallot cultivation technology increased after assistance providing. The farmer's attitude on environmental friendly of shallot cultivation after assistance providing in generally increased, but still dominated by farmers who had neutral attitude.

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DISCUSSION FROM PARALLEL SESSION

PAPER TITTLE	Productivity Improvement and Income Efforts of Rice Farming Through The Use new Superior Variety (Case Study)
AUTHOR	Nyoman Ngurah A, I Ketut Mahaputra, Suharyanto, and Jemmy Renaldi
DISCUSSION	
QUESTION	<ol style="list-style-type: none"> 1. Object, productivity, revenue, efficiency should be consistent with method of analysis and result 2. R/C analysis is not measure of efficiency there should be another method to measure 3. How to measure productivity should be defined in method of analysis 4. To compare the productivity among variety need a table 5. No cost of depreciation, no family labor cost, no cost of land rent (those cost should be
ANSWER	
SUGGESTION	<ol style="list-style-type: none"> 1. Native check of English is badly needed 2. Productivity measurement should be convident, using table will be useful 3. Using income analysis is more appropriate for this paper instead of using profit analysis



Agribusiness Development
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