



2016

"Small and Medium-sized  
Enterprises Competitiveness"

ISBN 978-602-7577-70-1



# PROCEEDING

## INTERNATIONAL CONFERENCE

Agribusiness Development for Human Welfare



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Yogyakarta

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Universitas Muhammadiyah Yogyakarta

Supported by:



# PROCEEDING INTERNATIONAL CONFERENCE

AGRIBUSINESS  
DEVELOPMENT FOR  
HUMAN WELFARE

*“Small and Medium-sized  
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**“*AGRIBUSINESS DEVELOPMENT FOR HUMAN WELFARE*”**

**Yogyakarta, 14 Mei 2016**

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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



**HAMENGGU BUWONO X**

## **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.



## 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.

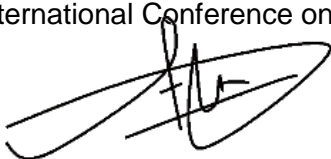
Especially, we are grateful to invited speakers, Prof. Zainal Abidin Mohamed and Asist. Prof. Pornthipa Ongkunaruk, for their willingness to share information and thoughts in this conference. As a bit report, that this conference has been attended by 85 speakers coming from five countries.

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




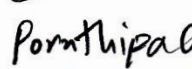

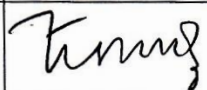
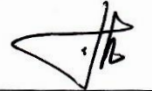


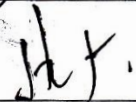
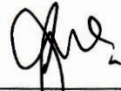


Dr. Aris Slamet Widodo, SP., MSc.

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1. Prof. Dr. Mad Nasir Shamsudin (Universiti Putra Malaysia)
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11	Ir. M. Kismuntono	LIPI	

## **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.

**Editor**

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## VALUATION IRRIGATION OF RICE FARMING AT UPSTREAM AND DOWNSTREAM AREAS IN SPECIAL REGION OF YOGYAKARTA

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### ABSTRACT

This study aims to know Willingness To Pay (WTP) farmers for management and maintenance of irrigation and factors that influence it on rice farming at upstream and downstream areas in Special Region of Yogyakarta. Survey is conducted to 60 respondents, 30 farmers at upstream area and 30 farmers at downstream area. Primary data obtained through questioners and interviews, and then analyzed using multiple linear regression and descriptive analysis. Analysis results show that the WTP average amount of Rp17.500,- at upstream area and Rp11.167 at downstream area. Willingness to pay is influenced significantly by family size, wide land area, irrigation management services, quality of irrigation water and location. There are some farmers in downstream area that will not pay for the irrigation. They opine the water is already in nature as God's present.

**Keywords: valuation, willingness to pay (WTP), irrigation, rice farming**

### INTRODUCTION

Agriculture Ministry (2013) issuing to increase crop production especially for rice farming 2,3% per year. That target could be achieved by increasing farming productivity with land intensification. Intensification could be increased by optimizing production inputs. One of that inputs is to hand over availability of irrigation water, especially at wet land farming. That statement is agreed by U.S Environmental Protection Agency (2012) with statement, "Irrigation makes agriculture possible in areas previously unsuitable for intensive crop production". In a row with previously statement, Agriculture Ministry (2013) in framework of developing main food crop production give an assignment to Unit of Echelon 1, as part of General Directorate of Infrastructure and Tools to execute developing agricultural irrigation in Indonesia.

Province of Special Region of Yogyakarta (2013) has wide wet land in amount of 56.539 acre. The land spread in some areas with wider wet land located in Sleman and Bantul Regency. Based on

area characteristic Sleman Regency is located closer with water irrigation sources, so it could be called as upstream area of water irrigation in Special Region of Yogyakarta. The irrigation water flow to various areas in Special Region of Yogyakarta, one of area is Bantul Regency which it has second wider wet land area after Sleman. Based on irrigation flow, Bantul could be called as downstream area.

Stability and good sanitation are influenced by irrigation canal infrastructures and tools, with sustainable management services. Indonesia government (1974) and Special Province of Yogyakarta government (2014) ordinance about irrigation explain that farmers have to participate in maintenance and treatment on the process of irrigation. According to Syaikat and Siwi (2009) explain that irrigation needs an expense to keep its sustainability. But in field, mostly irrigation funding does not appropriate with farmers willingness to pay. It causes burdening farmers economy. Therefore, to support it is needed field survey about farmers



willingness to pay (WTP) for sustainable management and maintenance of irrigation.

This study use Contingent Valuation Method (CVM) to get the value of WTP. This technique is explained by Suparmoko, et al (2014) and has been used in study of Misra, et al (1991), Tresnadi (2000), Norwood, et al (2005), Whitehead (2006), Weldesilassie, et al (2009), they use CVM as a method to determine value of goods and service which it are not marketable. To get the price of environmental cost could be got by respondents preference toward to non-market natural resource with give question about Willingness To Accept (WTA) or Willingness To Pay (WTP) as substitute merit loss or as to defend and increasing services of natural resource.

Based on earlier study willingness to pay for management and maintenance of irrigation is influenced by many factors. According to Alhassan, et al (2013); Cho, et al (2008); Arifah (2008) explain that the factors influence WTP consist of farm land location, ownership of land farm, land lease prices, income, knowledge, and farmer age. According to Hershey (1993) that water quality and management are also important factors for irrigation process. Then, the both factors should try analyzed as new factors that affect to farmers WTP.

This study aims to know farmers Willingness To Pay (WTP) for management and maintenance of irrigation, and the factors that influence it on rice farming at upstream and downstream areas in Special Region of Yogyakarta.

## METHOD

This study use descriptive analysis. Location determination is chosen using purposive method. Purposive method is used by consideration that water of the irrigation in the downstream area is flowed from water irrigation in the upstream area, therefore the both irrigation canal have one water source. This study took samples of each irrigation areas in upstream and downstream as many as 5 farmers as respondents with

simple random sampling non proportional technique. The overall number of samples in this study is 60 farmers.

## RESULT AND DISCUSSION

### Willingness To Pay (WTP)

Willingness to pay farmers for management and maintenance of irrigation describe the level of willingness of farmers' participation in ensuring the sustainability of irrigation in farming areas in order to empower independent farmers. The independent farmers will assist the government in giving aid that precise target, so the costs for management and maintenance of irrigation from government can be accommodated by irrigation expense contribution of farmers. Willingness to pay farmers distribution of rice farming at upstream and downstream areas in Yogyakarta can be seen in the following table.

Table 1. Willingness to pay farmers distribution of rice farming for management and maintenance of irrigation at upstream and downstream areas in Special Region of Yogyakarta, 2015

Source: Primary data processed

No	Interval WTP (000, Rp/GS)	Upstream		Downstream	
		Total (person)	Total (%)	Total (person)	Total (%)
1	0	0	0	3	10
2	< 10	10	30	12	40
3	10 - 20	17	56,67	13	43,33
4	20 - 30	1	3,33	0	0
5	30 - 40	0	0	1	3,33
5	40 - 50	1	3,33	1	3,33
6	> 50	2	6,67	0	0
Total		30	100	30	100

Source: Primary data processed

Based on the above data known that mostly values of willingness to pay (WTP) at upstream and downstream areas ranging from Rp10.000,- to Rp20.000,- per growing season. The data indicate there are only small proportion (13,337% at upstream area and 6,667% at

downstream) are willing to pay irrigation funding more than Rp20.000,- per growing season. It means that if applied irrigation funding more than Rp20.000,- it will burdensome farmers economy.

If the value of WTP both areas compared, the average value of WTP in upstream area is greater than downstream area. The upstream area has average value of WTP in amount of Rp17.500,-, and at downstream area only about Rp11.167,-. This value is derived by the total middle interval values of WTP divided by the total of respondents. From the value can be seen there are differences WTP value in both regions amount of Rp6.333,-.

The above data also shows that in downstream area amount 10% of farmers which have value of WTP amount of Rp0,-. It means that farmers do not willing to pay irrigation funding. Upon further interviewed exploration, the farmers claimed that water is already available in nature, then they opined that they do not need to pay cost for management and maintenance of irrigation. The presumption is classified on human attitudes that consider water resources as free in take or given from God which illustrated as paradoxical water pearl by Hartwick and Ollewiller (1997) in Arifah (2008) This attitude should to be educated for the sustainability of irrigation water resources.

If viewed by farmer willingness to be part of workers to manage and maintain the irrigation in both areas can be seen in the following table.

Table 2. Distribution of willing to participate of farmers as workers to manage and maintain the irrigation, 2015

No	Irrigation Area	Willingness To Participate	
		Yes (percent)	No (percent)
1	Upstream	93,334	6,667
2	Downstream	96,667	3,334

Source: Primary data processed

Based on the above table known that almost all farmers are willing to participate as worker to manage and maintain the irrigation. It means that without other or government participation farmers would still treat the irrigation for sustainability on his farming. According to result of interviewed, the management and maintenance of irrigation independently that using farmers as workforce has become a habit for a long time. The spirit of cooperation emerged because of the encouragement and farmers' awareness to manage and maintain the sustainable irrigation. To manage and maintain the irrigation usually instructed by farmers group management that known as P3A group, or by initiation of farmers with group agreement.

Some small farmers are not willing to manage and maintain the irrigation. They mention the reason that irrigation already has their own management, so the farmers claim that they do not need to participate as its worker. Other farmer claim that he will not participate because he is already too old, but he willing to pay irrigation funding higher than other farmers or to provide food while other farmers manage and maintenance irrigation.

### The Factors that Influence the Willingness To Pay (WTP) for Management and Maintenance of Irrigation

Willingness to pay is influenced by many factors. The factors that affect WTP can be used as a reference to collect irrigation funding with attention to the factors influence it in order to alleviate economy load of farmers. Based on analysis, WTP is influenced by the following factors that can be seen in the following table. To know the factors that influence WTP can be analyzed by multiple linear regression (Supranto, 2001).

Table 3. Factors that influence willingness to pay (WTP) farmers on rice farming irrigation at pstream and downstream in Yogyakarta

Source: Data processed consist of coefficients, the model summary, and analysis of variance

No	Model	Coefficient	t-count	Sig
1	Constant	3769,858	0,212	0,833
2	Age	-262,699	-1,099	0,277
3	Level of education	582,838	1,129	0,264
4	Family size	2001,727	2,019	0,049**
5	Farming experience	224,434	1,544	0,129
6	Wide land area	2,586	2,372	0,022**
7	Irrigation management services	1260,186	1,973	0,054*
8	Irrigation water quality	-2953,998	-2,112	0,040**
9	Ownership of land farm	-3301,242	-851	0,399
10	Location	10662,694	2.712	0,009**

R = 0,613 R-Sq = 0,376 R-Sq (adj)= 0,264

Analysis of Variance df = 59

F-count = 3.348 Sig. = 0,003

Note: \* = Significant at  $\alpha = 5\%$ , \*\* = Significant at  $\alpha = 10\%$

In comparison of value of f-count and f-table, known that value of f-table at  $\alpha = 5\%$  amount of 2.069, while the above data shows the value of f-count is greater than f-table that is equal to 3.348. The decision taken is to accept H<sub>0</sub> and reject H<sub>a</sub>. It means the willingness to pay is influenced simultaneously by age, level of education, family size, farming experience, wide land area, irrigation management services, irrigation water quality, ownership of land farm, and location. Partially, WTP is influenced significantly by family size, wide land area, irrigation water quality, irrigation management services, and location.

Based on the distribution of the t-table at  $\alpha = 5\%$  is known t-table amount of 2,007, while the value t-count of four variables above have a value higher than t-table. The variables are family size, wide land area, irrigation water quality, and location. Furthermore, there is one variable that has a value significantly below  $\alpha = 10\%$ , it is irrigation management services. Based on the distribution t-table at  $\alpha = 10\%$  is known amount of 1.675, while the t-count value of irrigation management service variable has a value higher than t-table that is equal to 1.973. Then, the decision taken is to accept H<sub>0</sub> and reject H<sub>a</sub>. It means as partially WTP

is influenced significantly by family size, wide land area, irrigation water quality, irrigation management services, and location.

Location has a coefficient amount of 10.662,694 with the direction of positive relationships. Location is a dummy variable, in this case the upstream area indicated by the value 1 and the downstream area value 0. Analysis result shows the value of WTP in upstream area is higher than the downstream area with a difference amount of Rp10.662,694,-. This indicates that each region has a different WTP each other.

The wide land area has a coefficient amount of 2,586 with the direction of positive relationships. It means that if the wider land area amount of the unit, the value of willingness to pay will increase amount of Rp2.586,-. Based on these data it is known to increase the value of WTP, the wide land areas have to be improved.

Family size has a coefficient amount of 2001,727 with the direction of positive relationships. It means if the family size is increased amount of the unit then will increase the value of willingness to pay amount of Rp2.001,727,-. In the case, family size can causes positive and negative impact. The positive impact

happen if the family size is consist of productive people then the source of income or farmers' economic conditions will increasing better, so the cost for farming will become more bigger. In negative side, if the family size is consist of non productive people, then it will be burden that complicate farmers economy. Therefore, in this study possibly the family size is consist of productive people which they help farming expense to increase sustainability farmers farming.

The irrigation water quality has a coefficient amount of -2953,998 the negative relationship. It means that if a quality of irrigation water in worse per unit indicator then WTP will increase amount of Rp2.953,998. This happen because the quality of irrigation water can affect to the farm process, so that if the water quality is getting worse, the famers hope to improve the quality, by increasing the cost to repair the water quality.

Irrigation management services have a coefficient amount of 1260,186 with positive relationship. It means the better irrigation management services amount of the unit indicator, then the WTP contributions will increase amount of Rp1.260,186. Therefore, increasing irrigation management services will increase WTP value.

Then from the above data can be made a multiple linear regression model by response variable the value of willingness to pay. The model equations are structured as below:

$$\begin{aligned}
 \text{WTP} = & 3769,858 - 262,699 \text{ Age} + \\
 & 582,838 \text{ level of education} + \\
 & 2001,727 \text{ family size} + 224,438 \\
 & \text{farming experience} + 2,586 \text{ wide} \\
 & \text{land area} + 1260,186 \text{ irrigation} \\
 & \text{management service} - 2953,998 \\
 & \text{quality of irrigation water} - \\
 & 3301,22 \text{ ownership of land farm} \\
 & \text{dummy} + 10662,694 \text{ location} \\
 & \text{dummy.}
 \end{aligned}$$

The regression coefficient served to explain the effect of each factor. The data shows the determination coefficient amount of 0,264. This value indicates the value is explained by the ninth WTP

variables (Age, level of education, family size, farming experience, wide land area, irrigation management services, quality of irrigation water, ownership of land farm and location) amount of 26,4%, while the remaining 73,6% is explained by other factors which not included on the model.

## CONCLUSION

Based on the results of the discussion above conclusions are derived as bellow.

1. The average willingness to pay (WTP) at upstream area amount of Rp17.500,- and in downstream area Rp11 167,- or mostly ranging on Rp10.00-20.000 by the WTP interval.
2. WTP is influenced by the location, wide land area, family size, irrigation management services, and irrigation water quality.

Based on the above conclusions, therefore suggested that the establishment of irrigation funding should pay attention to the factors that influence WTP, especially to wide land area, family size, irrigation management services, and the irrigation water quality.

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### DISCUSSION FROM PARALLEL SESSION

<b>PAPER TITLE</b>	Valuation Irrigation Rice Farming at Upstream and Downstream Area in Special Region of Yogyakarta
<b>AUTHOR</b>	Habibullah, Triyono, Aris Slamet W
<b>DISCUSSION</b>	
<b>QUESTION</b>	<ul style="list-style-type: none"> <li>- The study aims to WTP farmer for management and maintenance of irrigation. This paper hasn't been clear enough in stating the measurement whether is Rp/m3 or else?</li> <li>- What is the reasoning behind argumentation that family size able to influence WTP? Is quality of irrigation water variable's impact really based on certain theories?</li> </ul>
<b>ANSWER</b>	<ul style="list-style-type: none"> <li>- The measurement of WTP is Rp/ Growing season</li> <li>- The quality of irrigation water variable's impact negative to WTP. Family size is negative impact, if the family members are not productive. Low education and unemployment.</li> </ul>
<b>SUGGESTION</b>	<ul style="list-style-type: none"> <li>- Please explain some reasons in more detailed why such as family size effect the WTP</li> <li>- The conclusion should be clear, which variables are positive influenced and which variables are negative influenced.</li> </ul>