

An Assessment of Farmers Willingness to Pay for Wheat Consultant Engineers Project: In Iran

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Abstract: Problem Statement: Public extension performance in many developing countries including Iran is not up to the expectation of farming community. Further, in recent years, many governments are very reluctant to shoulder huge financial investment for public extension. Hence, extension specialists and policy makers propose privatization of extension services in developing countries. **Approach:** Considering existing agricultural extension scenario, a study designed to determine the level of farmer Willingness To Pay (WTP) for Wheat Consulting Engineers Project (WCEsP) (as a private extension services) in Esfahan province, Iran, during 2007. Questionnaires used to assess the amount which farmers were willing to pay and WCEs that were received incomes of farmers. Primary data on the demographic, socio-economic variables of farmers and their WTP collected from 100 farmers and 95 wheat consultant engineers selected randomly in a sampling procedure in the Esfahan, Iran. Data collected were analyzed using the Statistical Package for the Social Sciences (SPSS). The data summarized using frequency distribution. **Results:** Results of the analysis showed that (75%) of farmers no present for paying also (55 %) said that in the future no ability to pay. Also (63%) of WCEs did not receive any money from farmers. The result of farmers showed that were membership of WCEsP only extension volunteers had a more tendency for paying. In addition to WCEs that have played more roles in contracts, in way of getting money related to cost have acted successfully. **Conclusions/Recommendations:** The study concluded that there is a challenge to extension experts to make programs participatory and farmers relevant if farmers to be charged with the responsibility of participating in financing agricultural extension services.

Key words: Willingness to pay, farmers, wheat consulting engineers' project

INTRODUCTION

It is generally accepted that agricultural extension services have long been recognized as an important factor in promoting agricultural development^[1-3]. Over the years, the top-down model of public extension services has dominated in many developing countries. Nevertheless, in recent past, performance of public extension has been generally disappointing^[9]. The clientele were not satisfied with the existing public extension service provision. Further, concern for huge financial investment on public extension service, insufficient impact of services and limited accountability of the extension personnel makes the extension specialists and policy makers to propose privatization and or commercialization of extension services in most developing countries^[18].

Recent year's institutional pluralism in extension services has been increasingly recognized in Iran for

agricultural development. Efforts were directed towards establishing and strengthening public and private extension partnership. Further, decreasing financial support to the public extension needs to evolve the cost recovery or user contribution mechanism^[14].

Cost recovery is an important reform strategy in agricultural advisory services. In future, the survival of public and private extension mainly depends upon the clientele-satisfaction and financial sustainability of the system. A number of different countries have contracted out advisory services to private providers or have diversified the funding of this activity^[4,5,12,15]. Research can support this type of reform strategy of advisory services by evaluating how much a farmer would be willing to pay for advisory services by applying the Willingness To Pay (WTP) method. As such, WTP studies could be used to estimate the direct value or benefit of agricultural advisory services in the

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absence of a market for such services. This could also be considering as an alternative strategy to economic impact assessment for estimating the benefits of advisory services.

Studies have often derived WTP for advisory services from activities associated with dissemination of information and direct contact with farmers. Those activities were precisely the ones that have commercialized, or transferred to the private sector^[13].

WTP for advisory services can be directly or indirectly determined. An example of indirect estimation is the work of Dinar^[6] that estimated demand and supply for advisory service visits and then derived WTP for these services from the per hectare value added by subtracting the production cost (including advisory services) from the revenue. This approach can be implementing in places where the advisory service is strong and structured, as it is in Israel. The method demands detailed information not only about farm production but also about the performance of advisory services^[6]. A strong assumption for this type of study is that advisory services were delivered in an efficient and effective way^[7].

A study^[10] estimated WTP of dairy producers for individual advisory services visits in Ethiopia. These authors used a traditional consumer model and focused on the cash income constraint to derive the amount of income that the household is willing to forgo in order to have one additional unit of service rendered^[10]. Some researchers^[11], examined farmers preferences for seed of new rice varieties and their willingness to pay for information, as an indicator of willingness to pay for advisory services in rice production in Nigeria and Benin. Farmers' preferences modeled as a function of the utility obtained from rice seed attributes, social and economic characteristics of the farmer and level of information about the variety. Conjoint utility analysis used to estimate the marginal values of rice seed attributes and to derive the WTP for seed related information^[11]. According to a study^[8], there were statistically significant differences between older farmers and younger farmers for money that they were willing to pay for three (expert visits, print and farmer-to-farmer) of the five delivery technologies. There were also statistically significant differences for money that female and male farmers were willing to pay. For the other variables, there were no statistically significant differences^[8].

Gautam^[7], in Kenya and Suleiman and Sadamate^[17] in India provide examples of direct WTP for advisory services estimation. In both works, WTP for advisory services was elicited through contingent valuation methods, which are survey based economic techniques for the valuation of non-market resources,

typically environmental areas. The result of Saravanan and Veerabhadraiah^[16] showed that clientele were willing to pay for extension services on fruit cultivation practices, plant protection, new varieties, post-harvest technology and land development. Correlation analysis revealed that educational level, annual income, farm size and extension service commitment have influenced their willingness to pay for extension service^[16].

Considering existing scenario in agricultural extension, this study was designed with the following objectives:

- To determine the level of clientele satisfaction in the selected WCEsP advisory services in Esfahan
- To determine how often of WCEs were received wages and WCEs characteristics

MATERIALS AND METHODS

This study conducted to assess farmers' willingness to pay for (WCEsP) as a private extension services in Esfahan province, Iran. The study used a cross-sectional descriptive research design employing both qualitative and quantitative methods. Qualitative methods included focus group discussions, observations and individual discussions with farmers, while the quantitative methods involved use of the information obtained from the qualitative phase to develop and administer semi-structured questionnaires to all Wheat consultant engineers and farmers in Esfahan province. The statistical population of the study consisted of 7000 farmers who deal with wheat consultant's activities and 163 wheat consultant engineers out of which 100 farmers and 95 wheat consultant engineers selected as samples. The questionnaires covered different areas: demographic characteristics such as age, sex and levels of education, land characteristics such as number of lands, plots and farmers. Moreover, question about WTP. Data collected were analyzed by use the Statistical Package for the Social Sciences (SPSS). Appropriate statistical procedures for description was used as well as.

RESULTS

Farmer socio-dimorphic characteristics: The demographic characteristics (independent variables) of farmers have presented in Table 1. All of the farmers were men. Less than half of farmers (47.6%) had obtained primary school degree, followed by (29 and 23.7%) who had High diploma and Siki degree, respectively. Farmers were relatively old with the average age of 47 years. The average of agricultural experience was 27 years and the average years were participated 2 years (from 5). Average of wheat arable

Table 1: Frequency distribution of farmers demographic characteristics (n = 100)

Variables	F	%	M	SD
Age	100	100.0	47.12	12.34
30>	12	12.0		
31-40	15	15.0		
41-50	33	33.0		
51<	41	41.0		
Gender	100	100.0	-	-
Male	100	100.0	-	-
Level of education	100	100.0	-	-
Primary school	44	47.6		
Sikl	22	23.7		
Diploma and high diploma	27	29.0		
No response	7	-		
Agriculture experience	-	-	27.00	14.05
Years participated in WCEsP	-	-	2.10	1.15
1	35	37.6		
2	27	29.0		
3	18	19.4		
4	9	9.7		
5	4	4.3		
No	7	-		
Wheat arable (irrigated) land area (ha)			8.42	10.25
5>	54	54.0		
5-10	23	23.0		
10-20	11	11.0		
20<	12	12.0		
Number of wheat land plot			5.00	3.008
5>	78	78		
6-10	17	17		
10<	5	5		

Table 2: Frequency distribution of WTP farmers (n = 100)

Pay	Frequency	Percent
Yes	21	24.7
No	64	75.3
Total	85	100.0

Table 3: Frequency distribution of WTP farmer ability (n = 100)

Ability in future	Frequency	Percent
Yes	46	46
No	54	54
Total	83	100

Table 4: Frequency distribution of WTP farmer ability percent (n = 100)

Ability %age	Frequency	Percent	Cumulative %age
In future			
10>	6	17.6	17.6
10-20	3	8.8	26.5
20-40	10	29.4	55.9
40-60	8	23.5	79.4
60<	7	20.6	100.0

Table 5: The relationship between farmer's financial ability and their WTP

	WTP		Ability to WTP	
	Correlation Coefficient	Sig. (2-tailed)	Correlation coefficient	Sig. (2tailed)
Income	0.46**	0.00	0.46**	0.00
Literacy level	0.544	0.085	0.518	0.08
Land area	0.16*	0.043	-0.181	0.076
WCEs	0.56**	0.009	-	-
Present in farm				

** Correlation is significant at the 0.01 level (2-tailed). *Correlation is significant at the 0.05 level (1-tailed).

(Irrigated) land areas that each year was cultivated eight (ha) and the Average of number of wheat plots that each year cultivated were five plots.

Level of willingness to pay: The result of research showed that (64%) of farmers have not paid WCEs proportion of their income currently. Most reasons, which farmers have indicated, are referred to; they do not have enough income and financial ability for this purpose. Alongside some of them have mentioned that this process is vague for them and this matter have not been explicit for them by extension providers. In addition, In Iran, the land area used by more than (80%) of the farmers is under five ha in size, more than (50%) of the farmers have less than two ha and these lands are fragment into more than 10 plots. These problems make it hard to promote extension advisory services in Iran, in result, affected in farmer products and eventually earning less income (Table 2).

Also (54%) of farmers have stated (Table 3) which they will not have an ability for payment because of weak performance of Wheat consultant engineers. This was in result of that a large number of WCEs were selected no time lived in rural area and no accustomed with farm and advisory activities.

From among farmers that were ready for paying WCEs wages, the most frequency related to (20-40%) category and the least frequency related to (10-20%) category (Table 4). It estimated that regarding to condition of Iran that there were high quantity of small farmers, this cost is high for farmers and they will not pay this amount practically.

The result of research showed that farmers that had a higher financial ability were ready to paid in contrast with small farmers ($p = 0.01$).The farmers with high ability had paid more money ($p = 0.01$).

The result of research showed that there is no relationship between farmer literacy levels and their WTP. However, the result of chi-square tests showed that there is positive and significant relationship ($p = 0.01$) between the quantity of irrigated lands and farmers WTP. Nevertheless, between farmers background in agriculture and their WTP is not seen significant relationship (Table 5).

In addition, the results showed that whatever consultants have a more efforts for farmers, they are too satisfied for him payment. At the last step, the results showed that between farmers who were or are not member of cooperatives (farmers' organization) there is not significant relationship. (Table 6) Nevertheless, between persons that were membership of cooperatives only extension volunteers had more WTP ($p = 0.05$).

Table 6: The relationship between farmer's membership in cooperatives and their WTP

Farmers who are membership	WTP
Council	0.51
Rural cooperative	0.105
Models farmers	0.37
Extension volunteer	0.05*

*Correlation is significant at the 0.05 level (1-tailed)

Table 7: Frequency distribution of that received wages (n = 95)

WCEs that Received wages	Frequency	%age	Cumulative %age
Yes	35	36.8	36.8
No	60	63.2	100.0
Total	95	100	

Information related to WCEs: More than half of WCEs (52.1) were women. Over a (95-96.8%) had obtained B.Sc. degree, followed by (2.1 and 1.1%) who had high diploma and M.Sc degree, respectively. WCEs were relatively young with the average age of 28.7 years. Consequently, the average year for consulting agriculture was 3 years. Years worked in agriculture occupation prior to consulting were 4.6 years; nevertheless, (21.1 %) of WCEs not worked in agriculture section at all. Average number of farmers consult each year was 95 farmers and average of land plots (per cultivating period) were 210 numbers.

The results of research showed that among consultant engineers (60%) have not been able to receive any money from farmers (Table 7).

In addition, the result showed that between men and women consultant engineers there is not different significant in their receipt. That there was not significant difference between male and female consultant engineers in their wages. Nevertheless, farmers stated that they had a more WTP to female consultant engineers because of their ability in offering services to them.

In the next stage for identification of communication characteristics of consultant engineers that their wages were paid by farmers and their counterparts were not successful in this regard, was implemented comparison test. The results of research showed that a consultant engineers that were successful in this way, had more contact with agricultural experts and as a result, they applied their experiences in farmer's farms. In addition, they had more contact with farmers. They were born in rural area or had a good background in agricultural activities. This factor played an important role in their success (Table 8).

Table 8: Some consultant engineers communication characteristics

Communicative characteristics	Sig
Communication with agricultural researchers	0.848
Communication with university researchers	0.603
Communication with extension specialists	0.043
Communication with other WCEs	0.993
Communication with farmers	0.030
Agricultural work experience	0.010

DISCUSSION

Data further have indicated that, there was a general tendency that majority of the WCEs large scale farmers were WTP more for advisory services. Because of the expectation of farmers that if they were paying for advisory services, it help sure timely advisory services, payment positively linked with performance of WCEs project. Further, it is the matter of survival of WCEs and they need to satisfy the farmers with appropriate supply and services. Further, it is expected that if farmers were paying for the services they received, they get the ownership rights of appropriate advisory services and it forces the consultant engineers to provide information for which farmers feel a need. Private extension such as WCEs project tries to utilize the available resources efficiently in the farmers system. It helps sure quality advisory services and creates value for the service.

Finally, according to this project have been affected in large scale farmers rather than small holder farmers, therefore extension specialists and policy makers for the time being must be support small scale farmers with public advisory services and then in good time they would be supported with private extension. In addition, some of the farmers that very poor should be support at all times with public advisory services.

The majority believed that this project received its goals but the result showed not only farmers any ability to pay for WCEs but also WCEs not received.

- If private advisory (WCEs) services had remained in Iran, it should be farmers oriented and farmers more than previous must have been participated
- At the first step, WCEs signed contracts themselves and more interaction with farmers
- In selection WCEs, extension specialist must have been selected personnel's who not only had theoretical knowledge but also had practical knowledge and worked in farms
- At the primary step, policy makers and extension specialist supported private advisory services
- Finally, smallholder farmers must be support and advisory services should not be monetary
- Land reform law should be developing to facilitated WCEs advisory

We believed that policymakers and any other person are not able to understand farmers unless they live among them.

In addition, the result of research showed the more WCEs play roles in contracts, the more wage had earned successfully.

In last stage, consultant engineers that were successful in getting money of farmers asked, what are necessary strategies for project improvement in way of getting money of farmers for project cost? They argued that two characteristics are important in choosing of consultant engineers for project. These characteristics were shown below:

- A person who was born in rural areas is more appropriate for choosing as a consultant engineer
- A person who is able to work in rural condition is more appropriate for choosing as a consultant engineer

To pay attention to gender sensitivity, select consultant engineers for each area is serious matter. For area whose condition is suitable for women, it is better that, we employed them.

CONCLUSION

According to the results of the investigation it can be concluded that a major proportion of the smallholder (small scale) farmers participated in WCEs project have not expressed high level of relevancy, quality, usefulness and customer service, hence they had not WTP for WCE project advisory services, although large scale farmer had willingness to pay for WCEs project services. In order that, it is recommended that public extension may be withdrawn for farmers having big land holdings and high annual income and supported by private extension.

In addition, the results showed that WCEs were being farmers and formerly worked them could be able to received costs from farmers and farmers more than participated in these cases.

Previous results showed that farmers' satisfaction had positive influence on willingness to pay for advisory services, but it is not so among WCEs project farmers. Further, results revealed that farmers who have high level of education and high annual income, farm size influenced their willingness to pay for WCEs service.

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REFERENCES

1. Anderson, R.J. and G. Feder, 2003. Rural Extension Services: Agriculture and Rural Development Department World Bank, Washington, DC, World Bank Policy Research Working Study 2976. Available at: http://econ.worldbank.org/external/default/main?pagePK=64165259&theSitePK=469382&piPK=64165421&menuPK=64166093&entityID=000094946_03031111352821
2. Anderson, J.R., and G. Feder. 2007. Agricultural extension. In Agricultural development: Farmers, farm production and farm markets, vol. 3. In How to Make Agricultural Extension Demand-Driven? The Case of India's Agricultural Extension Policy Regina Birner, International Food Policy Research Institute and Jock R. Anderson, 2007. World Bank. Available at: <http://www.ifpri.org/PUBS/dp/IFPRIDP00729.pdf>
3. Birkhaeuser, D., R.E. Evenson, and G. Fader, 1991. The economic impact of agricultural extension: A rev. *Econ. Develop. Cultural Change*. 39: 607-50. In Beintema, N.M. & Pardey, Philip G. & Rose B.J, 1998. "Educating agricultural researchers: a review of the role of African universities," EPTD discussion papers 36, International Food Policy Research Institute (IFPRI). Available at: <http://www.ifpri.org/divs/eptd/dp/papers/eptdp36.pdf>
4. Chapman, R. and R. Tripp, 2003. Changing incentives for agricultural extension: A Review. Privatized Extension in Practice. Agricultural Research and Extension Network: 1-13. Available at: http://www.odi.org.uk/networks/agren/papers/agrenpaper_132.pdf
5. Davidson, A.P. and M. Ahmad, 2003. Privatization and the crisis of agricultural extension: The Case of Pakistan. Ash gate: Hants. Available at: http://books.google.com/books?id=13vAFbAPTasC&dq=Privatization+and+the+crisis+of+agricultural+extension:+The+Case+of+Pakistan&printsec=frontcover&source=bl&ots=6szKfBIwjH&sig=HTiI-ia3olulYLhzzCdf2Fa20tg&hl=en&sa=X&oi=book_result&resnum=1&ct=result
6. Dinar, A., 1996. Extension commercialization: How Much to Charge for Extension Services. *Am. J. Agric. Econ.*, Vol 78. Pp1-12. In Privatization and the Crisis of Agricultural Extension. Andrew P. Davidson, Munir Ahmad. 2003. available at:

- http://books.google.com/books?id=13vAFbAPTasC&pg=PA148&lpg=PA148&dq=Extension+commercialization:+How+Much+to+Charge+for+Extension+Services&source=web&ots=6szLiIviH&sig=x7iCg4tqV35hmvWjyZp2HIVx_60&hl=en&sa=X&oi=book_result&resnum=4&ct=result
7. Gautam, M., 2000. Agricultural extension: The Kenya Experience. An impact evaluation. Washington, D.C: The World Bank. First edition June 2000. Available at: http://books.google.com/books?id=9P66RQ2TmocC&pg=PA2&lpg=PA2&dq=Agricultural+extension:+The+Kenya+Experience++An+impact+evaluation&source=web&ots=jchXRRnUwT&sig=5TwbMRSLdINP9gmyGXEsPTxcrf0&hl=en&sa=X&oi=book_result&resnum=1&ct=result
 8. Haba, SH, 2004. Factors influencing the willingness to pay for agricultural information delivery technologies by cooperative-oriented agribusinesses in Rwanda: Evidence from the Abahuzamugambi Coffee Growers Cooperative of Maraba-Butare, Rwanda. Submitted to the Office of Graduate Studies of Texas A and M University in partial fulfillment of the requirements for the degree of Master of Science. Available at: <http://repository.tamu.edu/bitstream/handle/1969.1/2414/etd-tamu-2004A-AGED-Haba-1.pdf?sequence=1>
 9. Hansra B.S. and P. Adhiguru, 1998. Agriculture transfer of technology approaches since independence. India. J. Extension Edu. 9: 2168-2176. Available at: <http://www.ncap.res.in/biodata/adhiguru.htm>
 10. Holloway, G.J. and S.K. Ehui., 2001. Demand, supply and willingness-to-pay for extension services in an emerging-market setting. *Am. J. Agric. Econ.*, 83: 764-768. Available at: http://findarticles.com/p/articles/mi_hb6673/is_ai_n28861121
 11. Horna, J.D., 2006. Evaluating private participation in agricultural extension: The Case of Rice in Nigeria and Benin. Institute of Agricultural Economics and Social Sciences for the Tropics and Subtropics. Stuttgart, University of Hohenheim: 131. In from best practice to best fit. Birner, A. Davis, K. Pender, J. Nkonya, E. Anandajayasekeram, P. Ekboir, J <http://www.ifpri.org/divs/dsgd/dp/papers/dsgdp37.pdf>.
 12. Katz, E., 2002. Financial participation in practice: Experiences with Participation of Clients in the Financing of Extension Services. *BeraterInnen news*, 16-23. In Anderson, J.R. 2008. *Agricultural Advisory Services*. Available at: http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2007/11/06/000020953_20071106142607/Rendered/INDEX/413540Anderson1AdvisoryServices01PUBLIC1.txt
 13. LeGouis, M., 1991. Alternative Financing of Agricultural Extension: Recent Trends and Implications for the Future. In: *Improving agricultural extension. A reference manual*, Burton E. Swanson, Robert P. Bentz, Andrew J. Sofranko. Available at: <http://www.fao.org/docrep/W5830E/w5830e00.HTM>
 14. Qamar, K.M., 2002. Global trends in agricultural extension: Challenges facing Asia and the Pacific region. Keynote study presented at the FAO regional expert consultation on agricultural extension, Research-Extension-Farmer interface and technology transfer, held in Bangkok during 16th-19th July 2002. Available at: http://www.fao.org/sd/2002/KN0903a_en.htm
 15. Rivera, W.M. and W. Zijp, Eds., 2002. *Contracting for Agricultural Extension: International Case Studies and Emerging Practices*. Oxon, New York: 2002, CABI Publishing. The first edition. Available at: http://www.cabi.org/bk_BookDisplay.asp?SubjectArea=&Subject=&PID=1550
 16. Saravanan, R. and V. Veerabhadraiah, 2003. Clientele Satisfaction and their Willingness to Pay for public and private extension services. *Tropical Agric. Res.*, 15: 87-97.
 17. Suleiman, R. and Sadamate, VV. 2000. Privatizing agricultural extension in India. New Delhi: National Centre for Agricultural Economics and Policy Research (NCAP). Available at http://www-wds.worldbank.org/external/default/WDSContentServer/IW3P/IB/2004/08/19/000090341_20040819105945/Rendered/INDEX/278890IN.txt
 18. Umali, D.L. and Schwartz, 1994. *Public and Private Agricultural Extension: Beyond Traditional Frontiers* World Bank Discussion Papers No. 236 Washington, DC: World Bank. Available in www.landfood.unimelb.edu.au/dean/falveybk/refs.html - 64k