Agricultural Economics
Journal of Iranian Agricultural Economics Society

Vol.5/No.2/2011

Publisher: Iranian Agricultural Economics Society
Managing Director: Saeed Yazdani, PhD, Tehran University
Editor- in- Chief: Mohammad Bakhshoodeh, PhD, Shiraz University
Editorial Manager: Shahrokh Shajari, PhD, Shiraz University

***Editorial Board*:**

M. Bakhshoodeh, PhD ---------- ***Shiraz University***
S. Hoseini, PhD ---------- ***Tehran University***
S. Dehghanian, PhD ---------- ***Ferdowsi University of Mashhad***
H. Salami, PhD ---------- ***Tehran University***
G.R. Soltani, PhD ---------- ***Shiraz University***
G. Sharzei, PhD ---------- ***Tehran University***
D. Salehi- Isfahani, PhD ---------- ***Virginia Polytechnic Institute and State University***
M. Koopahi, PhD ---------- ***Tehran University***
R. Mohammad Rezaei, PhD ---------- ***Tabriz University***
H. Mehrabi Boshrabadi, PhD ---------- ***Kerman University***
B. Najafi, PhD ---------- ***Shiraz University***
S. Yazdani, PhD ---------- ***Tehran University***

***Address*: Journal of Agricultural Economics, Collage of Agricultural Economics and Development, Agriculture & Natural Resource Paradise of Tehran University, Karaj, Iran.**

Tel: (+98) 261-2222767
Fax: (+98) 261-2247783
E-mail: iaejournal@gmail.com
www.iranianjae.ir

Contents:

Surveying the relationship between agricultural products trade and virtual land in Iran
A. Esmaeeli
H. Mehrabi Boshreabadi

Estimating The Value of Irrigation Water By Hedonic Pricing Method, ACase study, Sabzewar County
A. Abounoori
H. Mohamadi Mohamadi
M. Noroozinejad

Considering welfare effects from fertilizer subsidy removal on wheat and barle
A. Karbasi
M. Kateb

Investigating the effect of laser leveling on water demand management in Marvdasht
Z. Shekoohi
M. Bakhshoodeh

Studying efficiency and profitability of trout culture farms in Fars province
M. Abedi
H. Mohammadi
M. Ghafari

Welfare effects and farmers satisfaction of dates procurement program in Fars Province
M. Estakhr
A. Esmaeeli
B. Najafi

Determination of optimal replacement time for combine harvester John Deere 955 in Fars province
H. Khodaverdi
M. Zibaei

Measuring and Analysing the Rate of Return of Agricultural Expenditures on R&D in Iran
A. Bagherzadeh
A. Komijani

Application of Discriminant Analysis Model to Study Factors Influencing Ownership of agricultural Machinery in Khorasan Razavi Province
S. Abed
M. Ghorbani
M.H. Aghkhani
Hooman Liaghati

Factors affecting acceptance of wheat insurance in Kohgiloyeh Va Boyerahmad province
A. Karami

ABSTRACTS

Surveying the relationship between agricultural products trade and virtual land in Iran

A. Esmaeeli and H. Mehrabi Boshreabadi*

Received: 13 May 2010 Accepted: 13 Nov 2010

Land is one of the natural resources in agricultural sector that its quality is affected by promotion of foreign trade. This article surveys the effect of foreign trade on land usage and its relation with sustainability. For this purpose, ecological footprint is calculated for the period of 1971-2007 and compared with biological capacity index that show sustainability a resource usage pattern, to obvious the sustainability status. Also, a concept called land footprint is calculated to survey the effect of international trade on land usage. The necessary data contain average yield of produced, exported and imported agricultural goods, amount of their exported and imported and also Iran's population and are collected from various sources. The results indicated that, ecological footprint (EF) is greater than biological capacity in studied years. It means that there is potential production capacity in agricultural sector in Iran. But EF is multiplier that indicates no sustainability approach of Iran. This status will be intensification by virtual land of land footprint. So the developed programs should be directed based on sustainability and compatible with sustainable agriculture.

JEL Classification: F18, Q56

Keywords: Foreign trade, land footprint, ecological footprint, Iran, virtual land

*Respectively Postgraduate student and Associate Professor of Agricultural Economics, Shahid Bahonar University, Kerman, Iran.
E-mail: adeleh_1363usa@yahoo.com hmehrabi2000@gmail.com

Estimating The Value of Irrigation Water By Hedonic Pricing Method, ACase study, Sabzewar County

A. Abounoori, H. Mohamadi Mohamadi and M. Noroozinejad*

Received: 25 May 2010 Accepted: 26 April 2011

In this research we use the hedonic method for valuing of water. This method uses for pricing goods or their attributes that we can not present them in market without their properties. We collect information for rent price and their properties by questionnaire method. From total of 500 questionnaires, 150 are for non-irrigated farm lands and 350 are for irrigated lands. Estimated models are separated for irrigated and non-irrigated pieces. Depended variable is natural log of rent price of one hectare of irrigated or non-irrigated farm land in the year of 2008-2009. Independed variables show quality properties; geographical situation of pieces, structural properties, resource and water properties. Results say that rent price average of non-irrigated lands in Sabzevar are different according to the type of soil. Price of land with lomy soil is higher than others (215980 Rials) and for sandy soil is lower than others (96870 Rials). Average of rent price for irrigated lands are difference too. in additional the quality of water is effective in this case. High prices are for farm lands with less sand and high quality water (2757100 Rials). Otherwise, pieces with more sand in their soil and low water quality for irrigate have lower price (1224700 Rials). At least, rent value of water for one hectare land with loamy or clay-sandy soil is higher than others (2541110 Rials).

JELClassification: C21, Q15, Q24, Q25, Q51

Keywords: Hedonic, Groundwater Aquifers, Pricing, Qualitative Attributes, Electrical Conduction (EC), Texture of Soil

*Respectively Assistant Professor at IAU-Tehran Centeral Branch, Assistant Professor at IAU-Tehran Centeral Branch and MSc of M.A.in Economics
E- mail: abounoori@yahoo.com

Considering welfare effects from fertilizer subsidy removal on wheat and barley

A. Karbasi and M. Kateb*

Received: 29 May 2010 Accepted: 23 April 2011

In the present study, considering the effects of chemical fertilizer subsidy removal on the welfare of both producers and consumers of wheat and barley by using the time series data of Iran from 1387-1357. Changes in welfare dependant on changes in consumer surplus and producer surplus. Therefore, consumer welfare by calculating the consumer surplus and producer welfare by calculating producer surplus is obtained. For considering of these changes, estimating of supply and demand in these products by subsidy and without subsidy on chemical fertilizer is essential. And eventually eliminate subsidies on each of these two products were investigated The results show that fertilizer subsidy removal reduces consumer and producer surplus of wheat and barley that this decline in wheat is higher, also removal of fertilizer subsidy reduced government spending and in total removal of fertilizer subsidy caused to increasing in net welfare of wheat and barley. Also considering of removal of fertilizer subsidy policy showing that this policy in barley to wheat in the net increase in welfare is more efficient operation, means that the net welfare of wheat compared with barley to eliminate fertilizer subsidies, is more sensitive.

JEL Classification: C1, C13, C22, D60

Key words: Subsidy, welfare, wheat, barley

*Respectively Associate Professor of Agricultural Economics, Ferdousi University, Mashhad, Iran and MSc . of Agricultural Economics, Zabol University, Zabol, Iran. E-mail: arkarbasi2002@yahoo.com

Investigating the effect of laser leveling on water demand management in Marvdasht

Z. Shekoohi and M. Bakhshoodeh*

Received: 27 June 2010 Accepted: 20 April 2011

Low water efficiency in agricultural sector and drought incidence in recent years caused serious water crisis in Iran and resulted in implementing various water supply and demand management policies. Introducing laser land leveling incentives in Fars province is among such policies. We used PMP model to investigate the effects of laser leveling on input efficiency and water demand management. The date used in this study included cross sectional data collected from a sample of 250 farmers in Marvdasht. The results indicated that utilizing this technology can reduce the need for labor and increase the farmer's revenue. Moreover, crop pattern is expected to switch to high water consuming products such as rice and tomato and to decrease water tensions for wheat, barley and corn in the region. Thus, the technology won't be useful in the cases of weak accessibility to water and under high water tensions. However, laser land leveling may be efficient with regard to yield improvement, input efficiency and facilitating of agricultural operations.

JEL Classification: Q12, Q25, Q55

Keywords: laser leveling, water demand management, Marvdasht

*Respectively Postgraduate student and Professor of Agricultural Economics, Shiraz University, Shiraz, Iran
E-mail:z_shokoohi@yahoo.com

Studying efficiency and profitability of trout culture farms in Fars province

M. Abedi H. Mohammadi and M.Ghafari [*]

Received: 30 July 2010 Accepted: 18 April 2011

The objective of this study was to investigate the production condition of the individual trout culture farms in Fars Province. To get the objective, concepts of production economics including production function, efficiency and profitability was applied using data of 56 active farms in 2008. Findings showed that Fars province trout culture industry faces a constant return to scale and food is the main production factor causing difference in farm productions. Under variable return to scale, the technical, allocative and scale efficiency of the farms were obtained 0.937, 0.512 and 0.971 on average, respectively. The results showed increasing (decreasing) return to scale in the case of 40 (30)% of the farms. Clustering the farms based on cluster analysis showed that more than 55% of the farms may be regarded as farms with low profitability experiencing profit of 132000 Rials per square meter while the corresponding figures for the class of farms with moderate and high profitability are more than 320000 and 920000 Rials, respectively. Operating with low scale was recognized as main source of low profitability.

JEL Classification: Q12, Q22

Keywords: Production, Profitability, Efficiency, Trout, Fars Province

[*]Respectively Assistant professor, Azad University, Sepidan branch, Sepidan, Iran and Assistant professors of agricultural economics, Zabol University, Zabol, Iran. E-mail:hamidmohammadi1378@gmail.com

Welfare effects and farmers satisfaction of dates procurement program in Fars Province

M. Estakhr, A. Esmaeeli and B. Najafi*

Received: 10 Sep 2010 Accepted: 27 Dec 2011

Regarding the importance of dates pricing policy in Iran, the objective of this research was to study the welfare effects of procurement program by middlemen in Fars province. The data were collected from a sample of 302 producers for evaluation of farmers' satisfaction through filling up questionnaires. Moreover, time series data were obtained from Fars Agricultural Organization, Statistical Center of Iran and Rural Cooperative Organization in the province. Date supply function was determined by use of ARDL method. Farmer's satisfaction was determined by use of Ordered Probit method. Results of estimating the ordered Probit method showed significant effects of producers' education, distance to purchase centers and the record of activity on the satisfaction of producers. The results of the study showed that performance of the program caused increase in producers' welfare and reduction in government expenditure. Finally, some recommendations were made to improve the procurement program.

JEL Classification: C5, I38, Q18

Keywords: Procurement program, Welfare effects, Ordered Probit method, Dates.

*Respectively MSc., Associate Professor and Professor of Agricultural Economics, Shiraz University, Shiraz, Iran.
E-mail: esmaeili1968@yahoo.com

Determination of optimal replacement time for combine harvester John Deere 955 in Fars province

H. Khodaverdi and M. Zibaei*

Received: 7 Nov 2010 Accepted: 26 July 2011

The decision to replace an item of farm machinery can be made because of cost minimization, reliability, new technology, need for capacity, obsolescence, wear and tear, and has a vital role in machinery management. In other words, most capital goods have an optimal lifespan and replacing machinery at a more or less than optimal age could significantly affect profitability. Therefore, this study aims to investigate the optimal replacement time under certainty condition using four methods for combine harvester in Fars province. According to the first method, the most appropriate time for combine harvester is the year in which the accumulated annual repairs, depreciation and maintenance cost per working hour is minimum. The second method considers the optimal replacement time for combine to be the year in which the initial value of the machine and accumulated annual repairs and maintenance cost per working hour is minimum. The third method for economic life determination is based on minimizing the accumulated average total cost per working hour and according to the fourth method, the most appropriate time for combine harvester replacement is considered to be the year in which the accumulated net income is maximum. By a stratified random sampling method, 160 John Deere 955 combine which is dominant in Fars province were chosen for interview to collect the technical and economic data and other needed information. The results showed that the optimal replacement time of a John Deere 955 combine under certainty condition were 16, 18, 14 15th year of its productive life with 18786, 21291, 16076, 17424 working hours respectively based on the results of four relevant methods!

JEL Classification: D2, D24, G11

Keywords: Combine, John Deere 955, optimal replacement time, Fars province

*Respectively Postgraduate student and Associate Professor of Agricultural Economics, Shiraz University, Shiraz, Iran.
E-mail: hadikhodaverdi62@gmail.com

Measuring and Analysing the Rate of Return of Agricultural Expenditures on R&D in Iran

A. Bagherzadeh and A. Komijani*

Received: 21 Nov 2010 Accepted: 19 July 2011

In economics the rate of return on agricultural R&D is one of the important factors for investment decisions in agricultural sector. The R&D expenditure is the core variable for the productivity factor. In this study, at first the impact of agricultural research and human capital was estimated on productivity by Almon lag model and in the next step the rate of return for agricultural R&D was calculated. The result showed that the R&D in agricultural sector affects the productivity after 4 years and this effect will last for 3 years.The long term coefficient of agricultural R&D is 0.17 and the internal rate of return (IRR) was calculated up to 36 % in productivity models of Iran during the period of 1979- 2008 (1358-1387). Therefore, it is suggested that the agricultural R&D expenditures should be increased to 2 % of agricultural GNP.

JEL Classification: O45, J23, Q18

Keywords: TFP, Agricultural R&D, Almon Model, IRR.

*Respectively PhD of Economics, Science and Research branch Islamic Azad University, Tehran and Professor of Economics ,University of Tehran
E-mail : bagherzadeh_eco58@yahoo.com

Application of Discriminant Analysis Model to Study Factors Influencing Ownership of agricultural Machinery in Khorasan Razavi Province

S. Abed, M. Ghorbani, M.H. Aghkhani and Hooman Liaghati*

Received: 25 Dec 2011 Accepted: 17 May 2011

This paper carried out to investigate the factors influencing ownership of agricultural machinery using a cross sectional data of 210 farmers selected by stratified random sampling in Khorasan Razavi province in 2009 analyzed by discrimination analysis. Results showed that average of age, experience, family size, annual income of the farmer, cultivated area in high price category of technology are statistically significant. Average of age, experience, family size, cultivated area, parcels of farms and annual income of farmer in moderate price category of technology for the choper, sprayer engine, broadcast seeder, mover, and fertilizer sprayer are significant at 1% level. Average of age, experience, family size, cultivated area, parcels of farms and annual income of farmer in low price category of technology are statistically are significant between two groups. Regarding the results, promotion of agricultural income through creating diversity in complementary activities, cultivated area lands expansion, consolidation of agricultural lands, providing ownership motivations in farmers through revision in land rent of Astan Qods Razavi, creating awareness system to farmers about advantages of investment in agricultural machinery through agricultural surplus income, bank credits by providing extensional-educational classes associated to agricultural machinery are suggested.

JEL Classification: Q12, Q15, Q18

***Keywords*:** Ownership rate, mechanization bank**,** leasing, discrimination analysis

*Respectively MSc., Associate Professor of Agricultural Economsic and Associate Professor of Agricultural Mashinary, Ferdousi University, Mashhad, Iran and Associate Professor of Environmental Science, Shahid Beheshti University, Tehran, Iran.
E-mail: ghorbani@ferdowsi.um.ac.ir

Factors affecting acceptance of wheat insurance in Kohgiloyeh Va Boyerahmad province

A. Karami*

Received: 7 Feb 2011 Accepted: 7 Aug 2011

The aim of this study was to investigate the factors affecting agricultural crops insurance and to recognize its barriers, in order to improve the coverage of agricultural crops insurance. Data were collected using stratified random sampling method from 79 insured and 106 noninsured farmers in Kohgiloyeh va Boyerahmad province, using probit model for determination of affecting factors. Results indicated that variables such as farmer's age, education level, awareness about insurance rights, average of total revenue, amount of debt, standard error of yield, risk management and acreage were effective factors on farmer's attitudes to accept crop insurance. Among these variables, mean of total revenue, education level, acreage, standard error of yield and the ratio of between minimum total revenue had positive effect on acceptance of wheat insurance while variables such as age of farmer, awareness about insurance rights, total debt had negative effects on acceptance of insurance. It is recommended to train farmers in order to increase their awareness about insurance and new technologies adoption.

JEL Classification: C_{25}, D_{24}, G_{22}, Q_{18}

Keywords: Insurance, Probit, Agricultural crop, Kohgiloyeh and Boyerahmad

*Assistant Professor of Agricultural Economics, Department of Rural Development Management, Yasouj University, Yasouj, Iran.
E-mail: aiatkarami@yahoo.com