Agricultural Economics
Journal of Iranian Agricultural Economics Society

Vol.4/No.2/2010

Contents:

ABSTRACTS

Determining Sustainable Cultivation Pattern in Phariman-Torbat-e- Jaam Plain

F. Mohamadiyan, N. Shahnoushi, M. Ghorbani and H. Aghel [*]

In this study, farmers' priorities and decision making about cultivation pattern were recognized applying AHP model. In order to investigate optimum crop pattern, seasonal and annual precipitation in forthcoming ten years were forecasted using "Seasonal Auto Regressive Integrated Moving Average" (SARIMA) model and annual entrance volume to groundwater resources was calculated at the first step. Then, regional crop pattern is suggested through utilizing various mathematical multi-loop programming patterns such as Non-Linear Programming (NLP), Non-Linear Weighted Goal Programming (NLWGP), Non-Linear Weighted Fuzzy Goal Programming (NLWFGP) and Non-Linear Fuzzy Goal Programming (NLFGP). These patterns would able us to set lots of mutual or opposite goals and maximizing any goal availabilities by ranking. By executing suggested cultivation patterns through ten-years planning period, we would be able to achieve maximum gross margin, and to minimize current investment costs and chemical fertilizer consumption and unchanged labor employment with least change in present regional cultivation pattern. In these patterns, ground water negative balance would change from 216 million cubic meters in base year to zero in last year of programming period and would save 1.2 billion cubic meters water through programming period.

JEL Classification: C61, Q01

Keywords: sustainable cultivation pattern, AHP, non-linear programming (NLP), non-linear weighted goal programming (NLWGP), non-linear weighted fuzzy goal programming (NLWFGP), Phariman-Torbat-e-Jaam plain

_____

[*] MSc. Student and Associate Professors of Agricultural Economics and Assistant Professor of Agriculture Machinery, respectively, Ferdowsi University, Mashhad, Iran.
Email: naser.shahnoushi@gmial.com

Investigating Competitiveness of Different Rice Production System in the Gilan Province

M. Kavoosi Kelashemi, Gh. Peykani and I. Saleh[*]

This study investigates comparative advantages of hybrid rice production by completing 238 questionnaires at hybrid rice farms of Gilan province in 2005-2006. Moreover, calculating social profit, export competitiveness capacity and applying linear programming approach for calculating comparative advantages indices and optimal social cultivation pattern of good quality long grain rice and high yield long grain rice in various scenarios are other aims of the study. Results of comparative advantages and export competitiveness capacity indices revealed better condition of high yield long grain rice in compare with good quality long grain rice in different scenarios. On the other hand, linear programming approach suggests extension of high yield long grain rice acreages to 86 thousands hectare in order to maximize social profit. Considering the importance of rice in food security of Iran, improving production systems is vital in order to establish mechanized cultivation of this crop and to reduce production costs for increasing competitiveness and prohibition of negative effect of decreasing supports policy.

_____

[*] MSc graduated, Assistant Professor and Associate Professor of Agricultural Economics respectively, Faculty of Agriculture and Development, Tehran University, Iran.
Email: mkavoosi@ut.ac.ir, tabmoh_763@yahoo.com

Study of Comparative Advantage and Trading Map of Date Exports in Iran

H. Mehrabi Boshrabadi, M. R. Pakravan and A. Shakibaie[*]

In this study, comparative advantage and trading map of Iranian date exports were surveyed. For these purposes, Revealed Comparative Advantage (RCA) and Revealed Symmetric Comparative Advantage (RSCA), Hillman and Trading Map (TM) indexes were used. Results show that Iran has had advantages in dates exports from 1995 to 2005, and average of RCA and RSCA indexes for studied period were 7.32 and 0.74 respectively. In ranking of the countries that have most comparative advantage in date exports in the world, Iran stands in second position after Tunisia. Also, in this study, Trading Map of main agricultural products was surveyed for the first time. Results show that despite of decreasing trade in international import market of dates between 2000-2005, Iranian dates exports have more shares of markets.

_____

1- Associate Professor and MSc. Student of Agricultural Economics and Assistant Professor of Economics respectively, Shahid Bahonar University, Kerman, Iran.
Email: hmebrabi2000@gmail.com, mohammadrezapakravan@gmail.com

Poverty and Risk Attitudes in Rural Areas of Fars Province

A. Shirvanian and J. Torkamani[*]

The current study attempted to investigate the poverty situation subject to risk attitudes in the rural areas of Iran. Various indices including head count ratio, poverty gap ratio and poverty severity were applied in poverty analysis. Risk preferences were investigated by using the equally likely certainty equivalent with a purely hypothetical risky prospect technique. Data were collected in 2007 from a sample of 120 households in three villages of Fasa region in Fars province. Result indicated that 48.33 percent of rural are poor and 51.67 percent are rich. Poverty gap and poverty severity criteria among the rural poor are 0.354 and 0.190, respectively. Risk attitudes distribution among rural poor indicated that 46.55 percent of rural poor are risk taker, 34.48 percent are risk averse, and 18.97 percent are risk neutral. The risk-averse rural poor involved the highest and the risk-taker rural poor involved the lowest poverty gap. Also, the risk-averse rural poor showed the highest and the risk-taker rural poor indicated the lowest sensitivity to income distribution.

JEL Classification: D1, D8, I3

Keywords: rural poverty, risk attitudes, Fars province

_____

1 PhD Student and Professor of Agricultural Economics respectively, Shiraz University, Shiraz, Iran.
Email: rasoolshirvanian@yahoo.com

Evaluation of Consumer Support Estimate of Bread in Iran

S. S. Hosseini and S. Iravani[*]

The main objective of this paper is to evaluate Consumer Support Estimate (CSE) measures of bread in Iran. The CSE indicator was calculated for the 1989-2006 period to analyze Iran's cheap food policy. Results show that the CSE between the first and the fourth five Year Development Plans increased from 705 billion Rials (local currency) to 23134 billion Rials on average. This shows that the amount of supports is 6 times than that of the first Five Year Development Plan. The %CSE indicator on average increased from %32 to 92% in the fourth plan. Also, NPC indicator shows that the price paid by the government to consumers in the fourth plan was %66 more than the world price, while for the first plan was %45 lower than the world price. This study suggests that the agricultural cheap food policies in Iran could be shifted from a distributive transfers to oriented policies towards productive policies.

JEL Classification: Q16, Q17, Q18

Keywords: agricultural support policies, cheap food policy, CSE index, Iran

_____

[*] Professor and MSc. Student of Agricultural Economics respectively, College of Agricultural Economics and Development, Tehran University, Iran.
Email: hosseini_safdar@yahoo.com

Market Valuation of Mangrove Forest in Qeshm Island Protected Area

A. Esmaeili and S. Paroon[*]

The main objective of this research is to estimate market value of mangrove forest in Hormozgan Province. Marginal value, net back value and avoided cost are used to measure market value of mangrove forest for shrimp fisheries and animal husbandry. The market value of mangrove forest for shrimp fisheries and animal husbandry (using marginal value) are calculated to be 7347700 and 325000 Rials, respectively. It means that the market value of mangrove forest for shrimp fisheries is higher than its value for animal husbandry. In addition, the total value of the mentioned forest for using net back value and avoided cost are found to be 4083915 and 5064730 Rials, respectively. Understanding the value of mangrove forest and impacts of human activities are major factors contributing to protect this forest. Finally, the results lend support to calls for greater policy emphasis on conservation of unique and irreplaceable mangrove forest.

JEL Classification: Q23, Q51

Keywords: Market value, Mangrove forest, marginal value, net back, avoided cost

_____
[*] Associate Professor and MSc. graduated of Agricultural Economics respectively, Shiraz University, Shiraz, Iran.
Email: esmaeili1968@yahoo.com

Determining Factors Affecting Wheat Insurance Demand: The Comparison of Classical and Bayes Econometric Approaches

A. Karbasi, S. Ziaee and A. Abdoshahi[*]

The aim of this study was to determine factors affecting wheat insurance demand by the farmers of Neyshabour region as well as to compare the estimated parameters by classical and Bayes approaches in large and small samples. Data were collected from 125 farmers (large sample) and 50 farmers (the small sample) were randomly selected among the large sample. Logit model was applied to the data for pursuing the objectives of this study and Maximum Likelihood Estimation (MLE) and Metropolis Hastings Sampling (MHS) were applied to estimate parameters of the model. In large sample, the results showed that variables such as family size, having non-agriculture occupation, type of ownership and risk taking have negative and variables such as education level, participating in extension classes and cultivated land have positive effects on insurance demand with both MLE (classical) and MHS (Bayes) approaches. Moreover, in small sample, the results indicated that the estimators of Bayes approach are more robust than classical approach. Therefore, it is possible to increase farmers demand for crop insurance by using policies such as increasing the farmers' education level, holding extension classes and conceding incentives such as credit.

_____

[*] Associate Professor and PhD student of Agricultural Economics, Zabol University, Zabol, Iran and Assistant Professor of Agricultural Economics, Ramin University, Ahvaz, Iran.
Email: samanziaee@gmail.com

Application of ANFIS in Comparison with ARIMA Model to Agricultural Products Retail Price Forecasting

S. M. Fahimifard, M. Salarpour and M. Sabouhi Sabuni[*]

In this study, the Adaptive Neuro-Fuzzy Inference System (ANFIS) is introduced and its application in forecasting the three perspectives (1, 2 and 4 weeks) ahead of Iran's rice, poultry and egg retail price was compared with ARIMA as the most common econometrics linear forecasting method. Through it, the weekly data collected from the website of Iran State Livestock Affairs Logistics and Country Welfare Big-store related to 2002/3/21-2008/6/21, and forecast performance measures such as; R^2, MAD and RMSE were used. Results of models performance evaluation showed that the forecasted test data related to ANFIS designed architects have more correspondence with the real data in comparison with the ARIMA forecasted out of sample data. Therefore, the non-linear ANFIS model outperforms the linear ARIMA model for all considered perspectives and agricultural products retail price.

JEL Classification: C22, C8, L66

Keywords: ANFIS, ARIMA, forecasting; agricultural products retail price

_____

[×] Graduate Student and Assistant Professors of Agricultural Economics respectively, Zabol University, Iran.
E-mail : mfahimifard@gmail.com

Evaluating Effects of Removing Fertilizer Subsidy and Direct Payment Polices on Cropping Pattern and Inputs Use
(Case Study: Agronomy Subsector of Sabzevar Township)

M. R. Bakhshi, G. R. Paykani, S. S. Hoseini and I. Saleh[*]

In this study, the potential reactions of farmers to removing fertilizer subsidy and applying direct payment policies, that may be applied by the government in order to increase the efficient use of fertilizer input and improvement of the quality of environment regarding the water and soil, were analyzed through the application of Positive Mathematical Programming (PMP) model and related simulation analysis under the framework of several scenarios. Scenarios considered are: decreasing 50 and 100 percent in the amount of fertilizer subsidy along with direct payment per hectare. The results show that the mentioned policies have different impacts on the group of farmers, on one hand, and the amount of land cultivated, on the other hand such that the complete removal of fertilizer subsidy leads to decreasing of fertilizer use to 102.85, 111.89 and 125.39 kg per hectare in first, second and third group of farmers, respectively. Also, decreasing planted areas in mentioned groups are 5.85, 4.71 and 6.08 percents. Results indicated that when removal of the subsidy policy is combined with the direct payment program, while increasing the efficiency of fertilizer input use, it may also give incentive for more production of strategic crops such as wheat, barely and cotton. Therefore, the hectares of land devoted to strategic crops for mentioned groups will increase between 1.5 and 5 percents. This study suggests applying direct payment policy along with removing fertilizers subsidy whenever future agricultural planning and policies are under consideration.

_____

[*] PhD Student, Assistant Professor, Professor and Associate Professor of Agricultural Economics respectively, Tehran University, Iran.
E-mail: bakhshi462@yahoo.com

Studying the Effects of Optimal Cultivation Pattern on Rural Poverty: Case study of Orzoo'iyeh District in Baft (Kerman – Iran)

M. Baniasadi and M. R. Zare Mehrjerdi[*]

One of the agriculture goals is decreasing poverty especially in developing countries. Using optimal cultivation pattern in addition to appropriate and logical utilization of production resources, it directs us towards increasing income. In this study, at first, FGT poverty index was measured for families of Orzoo'iyeh district in Baft. Then, optimal cultivation pattern in this region was determined using mathematical programming method. At the end, income variations and poverty index variations rate were calculated considering the obtained results and also the acceptance possibility of this pattern by farmers. The required data were collected using random sampling method from some villages and agricultural regions located in Orzoo'iyeh district of Baft city for farming year of 2007-08 by means of questionnaire among 64 farmers. The results delineates that utilizing optimal cultivation pattern is effective on poverty decreasing. That is %12.5 of villagers will be put on the poverty line by using the optimal cultivation pattern.

_____
[*] Respectively, MSc Student of Agricultural Economics of Tehran University and Associate Professor of Agricultural Economics, Shahid Bahonar University, Kerman, Iran.
Email : baniasadi.m65@gmail.com