



The Potential Impacts of Climate Change on the Agricultural Sector of Fars Province

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Abstract

Over the coming decades, global change will have an impact on food and water security and there are strong indications that developing countries will bear the brunt of adverse consequences from climate change. Agricultural sector is the most vulnerable to climate change, because of its dependence on water and temperature conditions. Consequently, it is important to understand the impacts of climate change on agriculture and natural resources in developing countries. The goal of this study was to estimate the potential impacts of climate change on Fars province's agricultural sector. To this end, this study was organized in three sections. In the first section, time series data covering 21 years (1988-2008) on crop yields, climate or non-climate related variables were used to estimate yield response functions. In the second section, the yield equations were used to investigate the physical impacts of alternative scenarios. In the final section, a price-endogenous mathematical programming model was used to simulate the welfare impacts of yield changes under various climate change scenarios. Sixteen combinations of alternative climate change scenarios which include 0°, 0.27°, 0.54°, 2.35° centigrade for temperature and -13, -6.5, 0, +20 percents for precipitation were made based on the findings of Ravan (2010). The results showed that both temperature and precipitation had a significant but non-monotonic impact on crop yields. The comparison results indicated that climate change impacts on welfare were mostly positive and the impacts on producers were much more significant than they were on consumers. Social welfare decreases by 1.5 percent if the reduction of precipitation is associated with no change in temperature but it increases by 13 percent at the most humid and warmest scenario. Finally, it was found that temperature is more significant factor than rainfall in the change of social welfare.

Keywords: Climate change, Fars province, Price endogenous spatial equilibrium model

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Determination of the Efficiency of Sistan Wheat Farms Using Incorporation Optimization Model with Degree of Conservatism Control Parameters and Data Envelopment Analysis (RDEA)

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Abstract

This study investigated the efficiency of wheat farms in Sistan province. The data consisted of 50 samples from crop producers in the Sistan region. Using the simple sampling method, the data was collected by completing the questionnaires. To evaluate the farm efficiencies, the two approaches of the “data envelopment analysis” and the “optimization model including parameters to control for the degree of conservation” were combined. The results showed that the average of the study farms’ efficiencies in the proposed model (RDEA) is reduced by increasing probability of constraint violation (p) under the constant level of a given uncertainty (ε) .. The Monte Carlo simulation method was used to evaluate the model. The simulation results indicate a higher capability of this model with respect to the DEA model. Therefore, this method can be used to obtain the efficiency of decision-making units.

Keywords: Uncertainty, Data envelopment analysis, Efficiency, Sistan

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Evaluation of Factors Affecting Willingness to Use of Organic Products in Mashhad County

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Abstract

The purpose of this study was to determine the effective variables on consumers' willingness to use organic products, as the final component of the food chain from production to consumption. Data was collected by questionnaire from 200 consumers in Mashhad county and the discriminate analysis was used to find out the most important factors to distinguish between two groups: the "consumers with willingness to consume" and the opposite group. Results indicated that "consumer's awareness of the nutritive value of organic products" was the most important factor on raising a consumer's tendency to buy organic products. Therefore, raising public awareness about the nutritive value of organic products develops and improves this sector as well as the consumption of safe foods.

Keywords: Nutrition value, Organic product, Safe food, Consumer's willingness

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Cropping Pattern of Agronomy Products in View of Relative Advantage in Ilam Province

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Abstract

With consideration to the resource limitation, it seems necessary to design cropping pattern scientifically in order to increase productivity of production factors and to decrease production average costs. This study aimed at identifying the optimum cropping pattern based on comparative advantage in three counties of Ilam Province including Darreh Shahr, Ivan, and Shirvan chardaval. To calculate comparative advantage indexes, we used the dataset associated with the year 2011. Moreover, linear programming approach was used to identify optimum cropping pattern. The results showed that the study counties do not have comparative advantages in producing some of their products. Comparing the linear programming results with the current situation, it is concluded that averagely 50 percent of the current products are acceptable based on the comparative advantage index. Consequently, to economically adjust the current crop pattern, it is recommended to consider products with comparative advantage for each county.

Keywords: Ilam, Cropping pattern, Linear programming, Comparative advantage

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The Effects of Exchange Rate Volatility on Export Demand for Apple and Potato (The Main Developing Producer and Exporting Countries)

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Abstract

As the world trade is growing, exchange rate acts as a bridge between different economies and its volatility can affect price level, output, exports and imports. The purpose of this study is to investigate the effects of real exchange rate volatility on the export demand for the two products of apple and potato in the nine developing countries of producing and exporting the two products during the period of 1992-2009 years. To achieve the goal, using Autoregressive Conditional Heteroskedasticity (ARCH) model, the real exchange rate volatility was estimated. Then the effects of exchange rate volatility on the export demand for apple and potato were analysed based on the panel data approach. The results indicate positive effects of real exchange rate and negative effects of real exchange rate volatility on the export demand. The weighted average income of importing countries has a positive effect and the relative export price of apple and potato has a negative effect on the export demand.

Keywords: Exchange rate volatility, Export demand, Apple and potato, ARCH model, Panel data

JEL: F31, Q17 Classification

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Assessment of Factors Affecting on Satisfaction Members of Cattlemen Cooperative (Case Study : Mashhad Cattlemen's Cooperatives)

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Abstract

The study investigates factors that affect members' satisfaction of Mashhad cattle husbandry cooperatives. The required data and information were collected via interviews and questionnaires from cattlemen. Cattlemen of Mashhad constitute the statistical population of the study. Using Cochran formula, 60 Cattlemen were selected randomly as the sample in 2013. SPSS software package was used to analyse a discriminant model. The results show that variables of cooperative education programs, meat purchase from cattlemen and technical services including diets and sperm preparation have significant negative impact on cattlemen's satisfaction of a cooperative 's performance. In contrast, variables of production and distribution of animal food, fair price for a farmer's milk, providing consulting services, participation methods for making shared decisions, ease of using facility services, cooperative employees' behavior have a positive impact on the cattlemen 's satisfaction of an organization's performance. According to the results, it is suggested that since preparation of some imported animal food is difficult for the cattlemen, cooperative have to assist the cattlemen to produce more in quantity. Furthermore, cooperatives have to consider the pace of services.

Keywords: Cattlemen's cooperative, Satisfaction, Discriminant analysis model, Mashhad city

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The Measurement of Agricultural Growth Sources in Agronomy Sub -sector of Iran

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Abstract

The object of this study was to investigate growth sources of agronomic products in Iran. To achieve our object, we used Fan's Frontier Production Function approach, which includes input changes, technical changes and institutional changes. The study conducted for the period between 1977 and 2011 years. Results of ADF test showed that all variables were integrated of order one. In addition, Johansen's cointegration test indicated that there are at least two cointegration vectors between these variables. Furthermore, outcomes of analysing growth sources of agronomic products indicated that annual growth of agronomic products has been 3.41% , of which 85.9% has been due to increasing the physical inputs including machinery, labor, land and chemical fertilizer with the shares of 39.58%, 26.97%, 11.14% and 0.17%, respectively. Moreover, the shares of the technical changes and the institutional changes in the annual growth of agronomic products were about 8% and 6%, respectively. Considering the highest share of physical inputs in the growth of agronomic products, policies and strategies for increasing the productivity of inputs are recommended.

Keywords: Agronomic sub-sector, Fan's frontier production function, Institutional change, Sources of growth, Technical change

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Analyzing the Factors Affecting Fish Consumption among the Households of Tabriz County

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Abstract

Fish is one of the healthy foods and a rich source of animal protein. Average household consumption of fish in our society is such a low in that one can rarely find it in a family food basket. Therefore, this study aimed at analyzing the factors affecting consumption of fish among Tabrizian households. To do this, a total of 224 questionnaires was conducted using clustered two-stage sampling method. Due to the ordinal nature of purchase frequency, the data obtained from the questionnaires was initially analyzed by using Ordered-logit model in order to determine the probability of being each family in four categories of non-consumption, annual, monthly and weekly consumption. However, considering that the parallel lines assumption was violated at this model, the Generalized ordered-logit model was finally utilized. Results show that the presence of a small child (< 10) or people suffered from a special disease a family significantly increase the probability of the family falling into the groups with higher levels of fish consumption. According to the research findings, households with older supervisors had higher levels of fish consumption. According to the findings, a rise in any price of red meat or egg increases the probability of consuming fish. The positive and significant coefficient of season shows that families don't like to eat fish in warm seasons. In addition, a rise in monthly income and family dimension decreases the probability of higher levels of fish consumption than the existing level.

Keywords: Affecting factors, Fish consumption, Generalized ordered-logit model, Tabriz County.

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Simulation Water Market and Analysis of the Effects Irrigation Water Sharing Policy on Cropping Patterns under Conditions of water Shortage

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Abstract

In the recent decades, due to water shortage problems, most countries have adopted their new policies from water supply management to water demand management . The main objective of the present study is a simulation of water market in order to determine the role of market in the balance between water supply and water demand and to analysis impacts of irrigation water sharing policies on the cropping patterns under conditions of water shortage in the Shahrood River Basin. For this purpose, positive mathematical programming (PMP) model and regional agricultural production functions were used. After the model design, irrigation water sharing policies in consistent with the legal deviations for each of the three different cases were simulated. Finally, deficit irrigations under the three scenarios 10, 20 and 30 percent were conducted. The data was adjusted based on the reference year of 2011. A part of the data was collected by completing the questionnaires and interviews in person with farmers from the three regions western Alamut roudbar, Rajai Dasht and Eastern Alamut roudbar. The other part of data was collected by visiting the relevant offices in the city of Qazvin. To solve the proposed model, the software GAMS version of 23/9 was used. The results showed that application of irrigation water sharing policy is a suitable approach for the allocation of water resources of the Shahrood river basin. Furthermore, the results showed that establishing the water market and trading between the regions increases the economic benefits for farmers. The applied irrigation deficit from 10 to 30 percent increased the total area of irrigated crops from 9 to 37 percents.

Keywords: Sharing, Alamut, Water Market, Positive Mathematical Programming, Irrigation Deficit

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Study and Comparison of Rural and Urban Household Income Distribution in Khorasan Province and Country during 2007-2012

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Abstract

This study examined distribution of household income in Khorasan Razavi province and the country for urban and rural areas, separately. Using household income and expenditure statistics compiled by the Statistical Center of Iran during 2007-2012 the Gini index, Tile index, Atkinson index and the tenth decile to the first decile were applied. The study findings indicate that during the studied period income inequality in the country has been decreased. The levels of disparity in the urban areas have been usually higher than its levels in the country. , while the levels of disparity in the rural areas have been always lower than its levels in the country.. Moreover, income distributions in the urban areas and the entire province have been always more uneven than what has been seen for the rural areas. Analysing the Tile and Atkinson indices ($\epsilon=1$) shows that both ascending and descending trends of the two indices were consistent with the Gini index and thus, the three indices are compatible and validate each other. On the other hand, analysing the Gross expenditures per capita for households and the Gini index shows that the levels of welfare in urban and rural areas of Khorasan were almost constant, however the index for the urban areas of the country has been decreased and for the rural areas has been increased. The social welfare often have been lower for the rural areas than the social welfare for the urban areas. The results indicate significant differences in income distributions among the province, the country's rural areas and the urban areas. The study therefore proposes regional plannings to be considered.

Keywords: Khorasan Razavi Province, The Gini coefficient, Tile index, Atkinson index, Deciles

JEL Classification: E25, D63, D33, D30

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