ABSTRACTS

Reaction of Growth Season Against Climatic Drought and Wet Year Case study: Iranshahr and Nikshahr

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Central area of Baluchestan with an area of about 42510 km^2 has a warm and arid climatic conditions. vertical radiation, degree of radiation absorption, high temperature, low precipitation and consequently poor vegetation cover are the main characteristics of this region. While sudden precipitations under the effect of Gang-Pakistan low pressures, can have a positive effect on the growth and development of vegetation cover in the area, which has caused opposite, different and oscillating climatic behaviors in the region . The existence of such special conditions justifies the study and review the behaviors' relation (oscillations and anomalies), precipitation and temperature with potential changes of vegetation cover by using Q_{gs} climatic equation.

With respect to the obtained Qgs values for the climatic period (1987-1997) (the wet period of the region)which is lower than the climatic period of 1998-2003(the dry period of the region),therefore, the tension resulting from drought in the areas with a higher Qgs value, is more and on the contrary, in the areas with lower Qgs, the grass lands of the area has had a better condition. on this basis, during the under study statistical years , the grass land sites located at Piranshahr area in comparing with the sites located at Nikshahr town ship area has faced with a lower shortage of water . consequently, the irregular behaviors of precipitation during the recent years has caused more damages to Iranshahr's green grass lands. Also due to the low height difference between the two regions, the height factor could not protect Iranshahr's grass land against the serious damages of water shortage in comparing with the grasslands of Nikshahr with a lower height.

Keywords: Drought, Wet year, Growth season, Growth season equation, Potential vegetation.

Synoptic Analysis of Thickness Patterns at the Time of Heavy and Extensive Precipitations of South Zagros Area

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In order to recognize synoptic patterns associated with occurrence of 100 extensive and extreme precipitation events in southern Zagros moderate rainfall region, graded precipitation data extracted from Asfazare data base for the period of 1961/03/21 to 2004/01/31. Spatial resolution of precipitation data is 14*14 km in a daily base. Geo potential height in two different levels (1000 and 500 hpa) from NCEP/NCAR data base with a spatial resolution of 2.5*2.5 have been used. The synoptic framework set from 0 to $120^{\circ}E$ and 0 to $80^{\circ}N$. In this study, an environmental to circulation approach has been used. Applying a cluster analysis on Euclidean distances of 1000-500 thickness using Ward method showed that 4 different thickness patterns are responsible for extreme and extensive precipitation events of southern Zagros moderate rainfall region. In all cases Mediterranean trough and eastern Iran's regions are responsible for baroclinicity in the western part of the country.

Keywords: Heavy rain, Southern zagros region, Synoptic climatology, 1000-500 thickness, Cluster analysis.

Evaluation of the MODIS and ASTER Emissivity Products Using Insitu Measurements

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Surface Emissivity mapping is a need in thermal remote sensing. Having accurate values of emissivity, one can determine surface temperature more accurate where this temperature can be used in environmental and climatic studies as well as in weather forecasting models. Due to the importance of surface emissivity and the accuracy in their estimation, assessment of the accuracy of MODIS and ASTER emissivity products have been considered in this work. For this, insitu measured values as well as laboratory values of emissivity from 6 different regions in United States of America, whom were extracted from the results of other researchers have used. In this work, TES method was deployed for calculation of ASTER emissivity values where MODIS emissivity values were extracted from 041 and 005 versions. Then, their differences with insitu measured values were calculated and their accuracies were compared with values extracted from bands 8.5 and 11 m for concurrent images of these two sensors.

The results of concurrent values of two sensors show that ASTER can produce 4.6% more accurate emissivity values in 8.5 m band compared to MODIS's. Also in 11 m band, for all regions on the average ASTER has 0.7% accuracy compared to ground values where this for MODIS is 1.2%. It is found that the error for MODIS extracted emissivity values of low emissivity surface covers increases. on the overall, ASTER emissivity values are more accurate compared to MODIS values. It is recommended that this results be taken in to account when using MODIS emissivity products as input in meteorological models as well as those application where accurate emissivity values is needed.

Keywords: Emissivity, Field measured, MODIS, ASTER, NAALSED.

Applying Contingent Valuation Method (CVM) To Measure Economic Value of Ecotourism In Shahr-e-Soukhteh of Iran

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Zabol County is one of the touristic and recreational regions of Sistan and Balochestan province. The purpose of current study is to estimate ecotourism value of Shahr-e-Soukhteh using Contingent Valuation Method. To study effective factors on the level of peoples, willingness to pay, Logit pattern was evaluated using maximum likelihood method.The required data were collected through questionnaire fulfillment and personal interview with 150 visitors in the mentioned region. Results showed that 75 percents of visitors were willing to pay more money for visiting this historical place. Also, dummy variables of sex, education level, person monthly income, personal protective tendency and distance between person residence place and Shahr-e-Soukhteh showed that these variables have direct and positive effect on people's willingness to pay in the examined sample. The negative sign of three variant regression coefficients, the recommended price, the respondent age and the number of family members, expressed opposite effect of the mentioned variables on the existence of willingness to pay in the sample. Results implied that the level of visitors and tourists willingness to pay is 4140 Rials. So, according to the historical importance of Shahr-e-Soukhteh and to the rate of visitors willingness to pay ,it is necessary that the programmers and liable pay more attention to this region in order to develop tourism and increase the number of visitors and tourists and improve visitors welfare.

Keywords: Ecotourism value, Conditional valuation, Logit Pattern,Willingness to pay, Shahr-e-Soukhteh.

Assessment and Zoning of Landslide Hazard Using AHP Model and Fuzzy Logic Operators in Posht Tang Watershed of Sar Pole Zahab (Kermanshah Province)

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Due to the hazardous nature of landslides in mountainous areas, often causes sudden damages to the morphology and also major damage to residential areas, roads, agricultural lands and other things. In this study we used AHP model in Expert Choice software also used fuzzy logic with IDRISI software for prepared landslide zoning map for "Posht Tang" catchment that located at the north eastern of district of Sar Pole Zahab in Kermanshah province. 9 parameters were selected which is related to the occurrence of landslide that comprise land use, soil, Surface deposits, precipitation, land cover, slope, geology, geomorphology and elevation. From all variables, only six variables including geology, slope, precipitation , vegetation cover , land use and height were recognized as significant layers.

Frequency ratio method was used for weighting the variable class that was determined based on the landslide percent between 0 to 1. Landslide susceptibility map were prepared with J-shape membership function and Gama fuzzy operation. From this point of view , the region was divided into very low, low, moderate, high and very high classes. Also accuracy of map was accessed by QS (Quality sum). The final weight of each factor in the AHP model showed that 36% of the catchment area is located in high and very high risk. While the operator of Gama fuzzy indicated 67% of area located in high and very high landslide Zoning. Model evaluating shows Gama fuzzy 0.7 model is more accurate than AHP model in the study area.

Keywords: Landslide, Hazard Zoning, AHP, Fuzzy logic operators, Posht Tang basin.

Changes of Agricultural Morphology in Rural Settlements of Salehan (Khomeyn) During the Period of (1962-2005)

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Agricultural morphology is transformable as a part of agricultural structure. This structural-functional transformations are happening continuously, however, the agricultural structure experienced sudden transformations in the land reform. Following that, the owners were increased, mechanization was entered in to the village and rural communities were entered into the capitalist world. Although transformation is an integral part of any system, but the consequences of these transformations are important.

This research has been performed with the aim of describing and analyzing the agricultural morphology in salehan village This research Statistical population is Salehan strict, which owns 9574 population in year 2006. For selecting sample villages and families, classification sampling and locations sampling has been used and mishijan, khoravand and divkan villages were selected as sample villages. Also research method of this study was the descriptive - analytical methods and data collection method as field survey and Library. Which for each of the methods specific tools such as: questionnaires, statistical tables and maps have been used. Results of this study show that Salehan strict also experienced changes from the land reform. Which consequently witnessed the spread of farmers ownership ' in the villages investigated. The phenomenon of private ownership along with rising population and Cultivation practices has changed, and change of the agriculture water resources were the main changes in agricultural morphology of the area. Such transformations had a direct impact on rural income and livelihood practices.

Keywords: Transforming, Agricultural morphology, Land reform, Salehan district.

Modelling the Hazard of Landslides by Using Statistical Method of Logistic Regression

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Landslides and instability slopes are major dangers for human activities which often cause the waste of economic resources and damage to properties and installations. These occur in the natural slopes or in the changed slopes by human. The main objectives of this study are identifying the effective factors on landslides occurrence in Kurdistan Province, Bijar and evaluating the regions prone to landslide to prepare the susceptibility map using the logistic regression. At first, in this study, by using field visits, questionnaires, geological and topographic maps and reviewing the studies, ten effective factors including elevation from sea level, slope degree, slope aspect, geology, distance from the linear elements (fault, road and river), rainfall and land use were employed. After identifying the factors, they were processed using ARC GIS 10 and ILWIS 33 software. Dependent variable is 144 slopes prone to landslide selected across the region as the landslide data (code 1) and 144 slopes stable against landslide were randomly as land slide free data (code 0). With overlay these data on each of the independent variables, the data necessaries were collected for entry into SPSS 18. The results showed that "slope degree" has the most significant role on landslides. Then, land-use, slope aspect, fault, distance from the drainage network, elevation from sea level , distance from road and litho logy are next effective factors, respectively. The results of the evaluation showed that logistic regression model with PCPT index equal to 83.4; -2LL index equal to 229.226 and ROC index equal to 98.5 percent and landslide susceptibility map based on SCAI index has high verification in the case study. Therefore, 75.489 % of the area has very low susceptibility, 10.037% with low susceptibility, 3.628% with moderate susceptibility, 4.062% with high susceptibility and 6.784% with very high susceptibility. These results can be used in predicting the occurrence of future landslides, decreasing their risks and planning for the land use.

Keywords: Landslides, Susceptibility Map Logistic Regression, ROC Index, SCAI Index, Bijar.

Measuring Inequalities in Shiraz Metropolis by Using Pandey and Nathwani Index

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Income inequality Calculated by using Gini coefficient presents a narrow view of overall inequality in a society. The research focuses on its much broader definition, referred to as socio-economic inequality, which considers the disparities in income as well as in mortality, and standard of living. This article presents a new method for measuring the socio-economic inequality using a composite social indicator, Life Quality Index, derived from two principal indicators of development, namely, income and the life expectancy at birth. The study method Is Quantitative - analytical and territory of research Is nine regions of Shiraz city in 2011. Using field data from the heads of households (384 households) have been collected, the state income stratum has been analyzed in Shiraz metropolitan region. Statistical Society of Shiraz is formed of households in the General Population and Housing Census 2006 was equal to 344 533 households. The sample size was calculated according to income stratum and a stratified random sampling of households in nine regions of Shiraz. The results show that the inequality index, showed that the inequality criteria in the study area is more than what is showed by traditional criteria of Gini coefficient and other indicators of income inequality.

Keywords: Income, Life expectancy, Quality adjusted income, Shiraz metropolis.

The Role of Hand-Made Carpet Cooperatives in Empowering Women in Hamadan Province

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Handmade carpet cooperatives have been established with the aim of both supporting the vulnerable carpet weavers of country and organizing them into a cooperative system in order to achieve social and economic justice in this art and national industry .Rural hand-made carpet cooperatives are among the most important and active organizations in carpet industry of country, and a large number of carpet–weaver's women are working in these cooperatives. Thus, the main objective of present investigation is to assess the role of rural hand-made carpet cooperatives in empowering the carpet-weaver's women in Hamadan province. For this purpose, 202 carpets -weaver's women who were members of carpet cooperatives were selected according to Cochran's formula, and to study the role of these cooperatives in their empowerment, 202 non-members women were selected as control group and their economic, social, family and professional capability have been compared. The analyses results revealed that there is a significant difference (1percent) between two groups in economic, social, family and professional capability. And empowerment of member carpet weavers women in the four above mentioned aspects are higher than that of non-member ones. Also, the results of comparison among the indices forming all factors of empowerment reveals a significant difference between two groups (1%). Only regarding the index related to the rate of participation in educational course, no significant difference was observed.

Keywords: Carpet-Weaver Women, Hand-Made Carpet Cooperatives, Empowerment, Hamadan Province.

Evaluating the Efficiency of Four Artificial Neural Network Methods in Preparing Land Cover/Land Use Map Using ETM$^+$ Data

Case study: Doiraje, Mehran and Sarableh

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Land use/cover maps resulting of satellite images play an important role in assessing the land use/ land cover at regional and national levels. Over the last years, many applications of neural network classifiers for land use classification have been reported in the literature, but afew studies have assessed their comparison. In this study, firstly, geometric correction was performed on ETM$^+$ data. Then, with field surveyings, the various land cover classes were defined and training areas were selected. The main Objective of this study is to compare four artificial neural network methods for land cover classification in Doiraj, Mehran and Sarableh region of Ilam province with various climatic conditions. In this study, we have used four artificial neural networks methods of Fuzzy Artmap, multi-layer perceptron, Kohonen and radial basis function. The results obtained of accuracy assessment of classified images showed that fuzzy Artmap classification algorithm with the overall accuracy 94.84 and kappa coefficient 0.93% have the highest accuracy than other methods. Accuracy overall difference in this approach than multi-layer percepteron method was 11.44 and Kappa coefficient 0.18, Compared to kohonen's 17.30 and 0.23% and rather than radial basis function 31.01 and 0.36%, respectively. In this study, the highest accuracy was related to fuzzy Artmap artificial neural network. Therefore, this study proves the efficiency and capability of fuzzy Artmap neural network algorithm in classification of remote sensing images.

Keyword: Land use, Image classification, Fuzzy Artmap classifier, Radial basic function classifier, Kohonen classifie, perceptron multi-layer classifier.

Optimal Locating for Physical Development of Sorkhankalate City, Using Analytic Hierarchy Process Method (AHP)

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Today, one of the most important and complex issues for urban programmers and decision making is locating suitable places for future development of cities and determining suitable lands, which this objective will obtain with a comprehensive view on all the effective factors on the physical urban development. To do this, the present research which is a developmental-applicable type, with the purpose of determining suitable locations for future development of Sorkhankalate city in Golestan province has studied this issue by descriptive- analytical method. For this purpose, multi-criteria evaluation method based on Analyzing Hierarchical Process (AHP) in GIS environment is used, and during this period, 13 natural and anthropological criteria have been used.

The obtained results show that suitable developing lands with the area of 33.61 percent are mainly located in the south and southeast and southwest parts , and the lands with low and very low suitability with an area of 38.42 percent are located in northern and northeastern and northwestern. With the application of proper strategies of development and leading residential and activity centers to suitable lands, it is possible to stop development of residential areas in unsuitable lands and use resources in better ways along side with preserving agricultural lands of the area. Finally, with the application of the algebraic relation, all agent plans were overlapped together with GIS environment and the lands' potential plan of the areas in the limit of the Hadishahr project of Sorkhankalate city was classified for city development. Finally, the basic suggestion of the present findings is concentrating on the future development of the city in the northern, northeastern, and northwestern, considering the suitable existing situation.

Keywords: Physical development, Analytic Hierarchy Processes, Geography information system, Sorkhankalate city.

Relationship Between El Nino Southern Oscillation (ENSO) and Total Ozone Variations in Iran

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Changing ozone layer which is measured as Total ozone (TO) oscillation name, are one of the modern human concerns as one of the causes or impacts of climate change. In this research, Total ozone oscillation in relationship with ENSO phenomena have been evaluated. To this aim, monthly mean data from Total Ozone Mapping Spectrometer (TOMS) in point by 1*1.25 degree of geographical distance and monthly mean southern oscillation index (SOI) as defining as El Nino and La Nina have been used. The results show that total ozone variations have the best fit to SOI index by Regression Cubic model and the total ozone could be estimated by this model on confidence level 99%. The relation between ozone values estimated by the model and the SOI index is inverse, strong and confidence in level significant 99% in annual, seasonal and monthly time scale in all aresa of Iran except a small area in the North West in July. Correlation coefficients were the strongest in the Central Region, South and Southeast of the country and the poor relations in the North and North West respectively. The results show that the total ozone in El Nino\La Nina occurrence will increase\decrease in all Iran areas. The value of (TO) increase from the south to north and the fitted line slope in El Nino is more.

Kaywords: Iran, Regression Cobic Model, Southern Oscillation Index (SOI), El Nino and La Nina, ENSO.

Feasibility Study of Border Industrial Town Using AHP and TOPSIS

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Ardabil province can be evaluated in terms of creating a boundary industrial zone to cause being in border area, neighbouring with the Republic of Azerbaijan and the customs and export to various countries. Feasibility of establishing boundary industrial estate is affected by factors such as population growth, employment, land constraints, industrial development, the customs Border, environmental protection and development, land use, raw material supply and etc. Multi-criteria decision-making methods as science, technology, management and analysis of data, can solve the problems relative to the site selection of boundary industrial estates. Various methods and algorithms for site selection have been used by researchers. This study was performed to select the appropriate location for the construction of boundary industrial estate in Ardabil Province. To achieve this objective, environmental, economic and social characteristic by AHP and TOPSIS methods was used for feasibility boundary industrial estate. Various criteria such as climate, landform, land use, protected areas, roads and highways, infrastructure, industrial development, unemployed people, exist primary sources were used. After performing calculations and algorithms, the results showed that use of two methods for locating industrial zone boundary did not have significant difference. As In both methods, the Namin city was determined ideal place for building boundary industrial estate.

Kew words: Industrial development, Feasibility study, Border Industrial Town, AHP, TOPSIS.

Study of Effective Factors in Gozal Darre and Karafs Alluvial Fans Formation and Investigation of Tectonical Activities on Southern Slope of Khrqan Mountain

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The Gozal Darre and Karafs alluvial fans are located on southern slope of the Khrqan Mountains in Hamadan province. The aim of this study is to investigate the effective factors in the creation of southern heights of Khrqan alluvial fans and also to investigate tectonical activtes. To achieve this aim, we used library and field methods. The research materials are topographic and geologic maps, climatic deta and arial photography. Also we used Arc GIS, Google earth and excel soft wars, for observation of landforms, drawing maps and diagrams. The results showed that ence with different formation of alluvial fans; the most impottant factors are related to tectonical activites. Study of quantetive geomorphology index has shown that tectonic movements on the area are active and **s**emi-active. For example Vf index with .11 and .72 and S index with 1.14 and 1.7 orderly for Gozal Darre and Karafs basin was estimated, that implication tectonic activities in the area. The evidence and data showed that the role of climatic factors reduced on alluvial fans in the area, in recent years. Also there are regular and logical relationship between alluvial fans features and upstream basins like basin area and morphometry in the study area. The total formation of this alluvial fan main factor is tectonic and other factors like climate, litology, rate and direction of slope is located in subsidiary levels.

Keywords: Alluvial fans, Tectonic, Basin characteristics, Khrqan.