

ABSTRACTS

Simulation of Rainfall-Runoff Process and Estimate of Flood with HEC-HMS Model in Khorramabad Catchment Area

Dr. Ahmad Mazidi

Associate Professor of Climatology
University of Yazd

Samira Kooshki

M.Sc of Climatology
University of Yazd

The rainfall-runoff process of a catchment area is mainly influenced by hydrological, Geomorphological and climatic conditions of the region. One of the most popular methods for understanding the rainfall runoff process is its simulation by using the hydrological model and analyzing the results. In this study, by using HEC–HMS model, the rainfall – runoff of Khorramabad catchment area was simulated and analyzed. The results showed a good correlation between the observed and simulated Hyetographs at the basin outlet. The values of performance indicators which simulated at the validation stage by Nash–Sutcliffe coefficient and coefficient of variance were 0.68 and 0.09 respectively, which indicate the high-performance of model in estimating maximum flow in the studied catchment area. Then by using the optimized parameters, the rainfall Hyetograph at different return periods were entered in the model and the flood Hyetograph was obtained at different return periods.

The use of model in the return periods of 2, 5, 10, 50, 100 years respectively has caused the flood peak discharge rate of 762, 1020, 1442, 1955, 2248 cubic meters per second. Results show that runoff can be predicted with high accuracy by using this model.

Keywords: Runoff, HEC-HMS model, Rain, Estimate of flood, Khorramabad catchment area.

**Measuring the Public Awareness of Residents about the Civil Rights
and Regulations Case study: Ameri District in Ahvaz city**

Dr. Masoud Safaeepour

Associate Professor of Urban Planning Geography
University of Shahid Chamran

Fatemeh Piri

M.Sc of Urban Planning Geography
University of Shahid Chamran

Raising public awareness of the residents of a city about the civil rights and regulations is the main important factors which should be considered for achieving a sustainable and desirable city. Citizens' awareness allows them to enjoy the rights which society has considered for them.

civil laws and regulations can be regarded as one of the main connecting points between the urban management and citizens. In a better word, the main actors of urban management in the light of urban rules and regulations, while defining duty for themselves and other Users can participate citizens in managing the civil affairs. This study aims to understand the knowledge of Ameri's residents about the urban rights and regulations which based on the research data, the awareness level of people among the residents were described. This research is a descriptive analytical study which was done by using SPSS software and a sample of 370 people among neighborhood residents was selected and the level of knowledge was evaluated. Results indicated that the public awareness about the rights and laws of the local residents were low. On the other hand, the index had a significant correlation with gender and job activities and level of education and age of the residents of these indicators has no effect on this index.

Keywords: Public awareness, Civil rights and Regulations, Sustainable city, Ahvaz, Ameri district.

Eco-Village; a Model for Sustainability of Rural Systems in Iran

Dr. Mohamadreza Rezvani

Professor of Geography and Member of
Rural Planning hub
University of Tehran

Mahnaz Rahbari

Ph.D Student of Rural Planning Geography
University of Shahid Beheshti

Creating a healthy environment in rural areas is one of the most important environmental issues, which is important not only in rural development policies, but also in territorial policy. In this respect, the necessity of paying attention to a model of the biological habitat which has the required sustainability for the development and are used at the best in all economic, social, cultural, political and environmental fields is felt more than before. Eco-village patterns as one of the new approaches in rural planning can play an effective role in protecting the natural environment and promoting the quality of life at local level in the rural settlements of the country. The present study, aims to explain the concept of eco-village, the historical background and dimensions and the global experiences related to the topic, using the descriptive method(the library and archives). Based on the finding, eco-village emphasizes on waster reduction and recycling, improving energy efficiency, reducing the industrial pollution, reducing water usage, protecting the green space, preventing the irregular distribution of villages, security and participation of the villagers in development plans .There exists different kinds of Eco-villages in the world.. Up to now in Iran no clear plan, based on the pattern of Eco-village which all aspects of Eco-village has been fully and comprehensively being considered, has been implemented and only a few scattered activities in limited area such as biogas technology, waste management and composting, solar villages and wind and solar energy have been performed in a number of the villages. But with respect to the existing capacities, there exists the possibility of forming Eco-village in different parts of Iran and connecting to the global Eco- village network.

Keywords: Eco-village, Sustainable development, Sustainable communities, World's experience, Iran.

**Evaluating the Principles and Guidelines of Urban Intelligence Growth in Future
Development of Rasht City Based on Helder Population Density Model**

Dr. Asghar Shokrgozar

Assistant Professor of Urban Planning Geography
University of Gilan

Zahra Jamshidi

Ph.D Student of Urban Planning Geography
University of Yazd

Parvaneh Jamshidi

M.Sc of Urban Planning Geography
University of Zabol

Population growth of Iran cities has faced with a significant increase since middle of 1980 comparing with the previous decades. Among the changes that occurred following the population increase, is the urban sprawl expansion which is due to the non-planning in the utilization of urban lands. In this regard, various urban communities have adopted different solutions for facing with urban dispersed development. One of such strategies is the intelligence growth theory as an urban, regional and transportation planning theory which emphasizes on preventing the city spread and allocation of space to other land uses in the populated district or city center. The aim of this paper is the analysis of the strategies, principle and guidelines of Urban intelligence Growth by emphasizing on the future expansion of Rasht city based on Helder population density model. The results showed that the area of Rasht in years 1961-2006 has increased from 810 to 12722 hectares and its population has increased from 109,491 to 557,336 people which the hurrying development of the city during this period. Also During the same period, the number of neighborhoods has increased from 8 to 35. Among the 100% of land Additions to the city, between 1966 -1990, 57% is related to population growth and 43% is related to horizontal expansion. Between -1991-2006, 73% was related to population and 27 %was related to the horizontal expansion of the city, which indicates the decrease of horizontal development between these years. So for control of dispersed development of the city, the intense development of the central part of the city, development of the culture for vertical development of the city and finally, providing welfare facilities in rural areas to prevent immigration villagers to the cities shall be emphasized.

Keywords: Horizontal expansion, Dispersed urban growth, Urban intelligence growth, Helder model, Rasht city.

Review and Determine the Trends of the Quantitative and Qualitative Parameters' Changes of Hot Mineral Springs in the Touristic City of Sarein Using Non-Parametric Mann-Kendall Test

Shahin Hanifezadeh

M.Sc of Civil Engineering

University of Islamic Azad, Ahar

Dr. Mohamadali Ghorbani

Associate Professor of Water Engineering

University of Tabriz

Dr. Hossein Jabbari khamnei

Assistant Professor of Statistics

University of Tabriz

Sarein hot mineral springs have a great important role in supplying water resources, economical development and attraction of tourists in the area. Therefore, the study of qualitative and quantitative changes trend of water has a great importance. In this study, non-parametric Mann-Kendall test was used to evaluate the qualitative and quantitative parameters of Sarein mineral hot springs (9 springs) during 1981–2011 at 3 significant levels of 1%, 5% and 10%. The quantitative parameters are discharge and temperature With 25 years of monthly data and qualitative parameters are pH, silica content, electrical conductivity and total hardness With 30 years of annual data. Firstly, the first order significant autocorrelation was removed from the data set. For each data series, the slope of the trend line was calculated using Sen Gr estimators. At last, a relatively acceptable general consistent with the basic premise of the research on reducing the discharge and temperature rise due to global warming were obtained. Most of the springs discharge had a significant negative trend and on the other hand, the trend of Springs is a reducing trend. The results for the temperature of the springs showed that 3 springs' temperature was increased and 2 Springs temperature was reduced and other springs have no significant trends. pH and silica levels in most springs has increased during 30 years ago and Electrical conductivity and total hardness was reduced in most of them.

Keywords: Time series, Sarein Hot mineral springs, Mann–Kendall, Sen, Autocorrelation.

Simulation of the Future Climatic Changes in Jask Area and Its Impact on Hara Forests

Hana Etemadi

Ph.D Student of Environmental Science
University of Tarbiyat Modares

Dr. Mohamad Sharifikia

Assistant Professor of Remote Sensing
University of Tarbiyat Modares

Dr. Seyede Zahra Samadi

Lecturer of Civil and Environmental Engineering
University of South Carolina

Dr. Abbas Esmaeili Sari

Professor of Environmental Science
University of Tarbiyat Modares

Dr. Afshin Danekar

Associate Professor of Environmental Science
University of Tehran

Mangrove tide etangs which are placed at border line between the arid and sea-land, have a considerable ecological and social–economical value.

This study uses (LARS-WG) along with two GCM models (MIRH and HadCM3) and the A1B scenarios to simulate climatic variables of minimum and maximum temperature and rainfall in the past and future periods. In reviewing the uncertainties, the results indicate the high capability of LARS-WG model in simulation of climatic variables simulation specially in arid ecosystems. Based on MIHR downscaling results, minimum and maximum temperatures will increase in cold season from November to March up to $\sim+4.21^{\circ}\text{C}$ and $+4.7^{\circ}\text{C}$ respectively. While increasing up to $\sim+3.62^{\circ}\text{C}$ and $+3.55^{\circ}\text{C}$ in the warm season from June to October as well. Based on HadCM3 results, minimum and maximum temperatures will increase in cold season up to $+3.03^{\circ}\text{C}$ and $+3.3^{\circ}\text{C}$ in warm season at the end of this century(2100) . Maximum temperature will increase above 38°C during the warm season within the years 2080-2099. It is predicted that the difference between day and night temperature will reach to the minimum level. In this manner, this condition will affect ecological and biological Mangrove processes. The linear regression of observed T-min data shows a $+3.14^{\circ}\text{C}$ increase over the past 42 years. Based on HadCM3 and MIRH model results, precipitation will increase in warm months and decrease in cold months within the years 2080-2099.

Keywords: Climatic changes, Downscaling technique, Uncertainty, Mangrove forest, Jask.

Review the Role and Function of Urban Planning in Realization of Historic Sustainable Area of Yazd City (Case study: Historic Texture of Yazd City)

Dr. Mohamadhossein Saraiee

Associate Professor of Urban Planning Geography
University of Yazd

Dr. Jila Sajadi

Associate Professor of Urban Planning Geography
University of Shahid Beheshti

Mehdi Alian

Ph.D Students of Urban Planning Geography
University of Shahid Beheshti

Dr. Ehsan Lashgari

Assistant Professor of Political Geograhpy
University of Yazd

Beginning the social life of each urbanite and communicate with others begins from the neighborhood, and urban neighborhoods as the most distinguished unit of urban spatial organization play an important role in urban sustainability. In the theory of human-based development, sustainability at the local areas level (as comprehensive concept of social, economical , environmental and physical c) and also citizenship are the two fundamental accepted principles which are introduced as the most general conceptual principles in different societies whether developed or under developing;but implementation of these principles and achieving its appropriate structures depends on the organization and efficient management system that three separate but interconnected environment, society and economy loops leads to the sustainability of the neighborhood. The present research has studied the neighborhood sustainability situation and urban management role in its realization in the historic texture of Yazd. To this aim, descriptive-analytical and monitoring methods have been used in the form of fuzzy logic technique and statistical tests of correlation and linear regression. The results show the negligence of the responsible authorities regarding the sustainability criteria of historical texture, therefore in spite of fluctuations sustainability values from 0.474 to 0.312 in the Godale-Mosalla to Zoroastrian neighborhoods, but the results show unsuitable conditions of sustainability and locating the neighboring textures in poor class. On the other hand, despite the impact of urban management in environmental dimension of neighborhood sustainability, but generally relationship between neighborhood sustainability and urban management variables and correlation are not acceptable and urban management in other aspects of neighborhood sustainability is not effective. Thus, paying attention to systematic and professional approaches with citizen participation can lead to an optimum model for neighborhood sustainability and active role of urban management and conservation of the historic texture of Yazd city.

Keywords:Sustainable Development,Neighborhood,Neighborhood Sustainability,Urban Management, Historical Tissue of Yazd city.

The Study and Analysis the Clusters of Heavy Rainfall Threshold in Iarn

Mehdi Doostkamian

Ph.D Student of Climate Change

University of Zanjan

Dr. Seyed Hossain Mirmousavi

Associate Professor of Climatology

University of Zanjan

The aim of this study is to analyze the areas of heavy rainfall thresholds in Iran. For this purpose, daily rainfall data of over 50 years were produced from Esfezari database. In continue, percentile was used to determine the heavy precipitation threshold. In order to study and zoning the thresholds, the analysis of harmonic means has been used. By implementing cluster analysis on heavy rainfall, four zones as the following were recognized. First, the zone with great heavy rainfall threshold and coefficient of very great changes, second, zone with medium heavy rainfall threshold and coefficient of medium changes, third zone with very great heavy rainfall and coefficient of very low changes and the fourth, zone with too low heavy rainfall and coefficient of very great changes. Among the zones, the third zone, i. e. the Caspian coast has had the highest heavy rainfall threshold, while a great deal of areas in the central part of Iran has had low heavy rainfall threshold. The results of the analysis in the four zones indicate that except in the third zone, which the medium term is dominant, in other areas, the short term cycles is dominant on the Iran's heavy rain fall threshold.

Keywords: Heavy rainfall thresholds, Spatial gravity, Cluster analysis, Iran.

The Role of Risk Management Strategies to Mitigate the Damages Caused by Earthquake (Case study: Khorramabad city)

Dr. Gholamali Khammar

Assistant Professor of Urban Planning Geography
University of Zabol

Aminolah Rakhshani

M.Sc Student of Urban Planning Geography
University of Zabol

Various types of natural hazards and their influence spread as unrepeatably and destructive phenomena, always have existed during the earth life. And after the human birth have always been a serious threat to mankind. So planning before crisis is one of the important issues of the world's today that urban managers are facing with especially in the field of crisis management. Since Iran is considered as the disaster-prone countries in the world, the urban management shall have a great power and capability in facing with natural disasters and in order to mitigate the effects of urban crises shall improve their capability and power continually. One of cities of Iran which faces more than others with this difficulty is Khorramabad. This city, due to its geographical position and locating among Zagros Mountain chains and also the existence of floodways and rivers inside it on one hand and placing on a great deal of faults on the other hand has a high vulnerability against natural disasters. This paper studies the role of crisis management to mitigate the effects and damages of natural disasters (earthquake) in Khorramabad city through library - Descriptive analysis approach and field evaluation process. The results of the study can be used for decreasing the effects and damages due to natural disasters as particularly and also proper management and planning can be referred. Also GIS software is used for the analysis of data.

Keywords: Planning, Crisis management, Earthquake, Khorramabad.

Application of Assessment Indicators of Active Tectonic in Estimating Tectonic Situation in Heble Roud Basin

Dr. Abolghasem Amirahmadi

Associate Professor of Geomorphology
University of Hakim Sabzevari

Majid Ebrahimi

Ph.D Student of Geomorphology
University of Hakim Sabzevari

Sima Pourhashemi

M.Sc Student of Geomorphology
University of Hakim Sabzevari

The quantitative measurements allows the geo morphologists to compare different land forms and calculate the morphologic indices. The alluvial fans are among the common forms in the arid and semi arid regions which developed under tectonic and climatic elements. These forms are quite sensitive to tectonic changes and register their effects in themselves. Therefore, through studying these effects and evidences, we can realize the procedure of the tectonic effects and changes of alluvial fans. The purpose of this study is to investigate the role of tectonic factors in the development and morphological changes of the alluvial fans of Garmsar. In this study, the topographic maps, geology, satellite photos and the digital elevation model (DEM) were used as the main research data. In addition, the morphology of the alluvial fans of the region was studied closely and through the field study. Then, using the geomorphic indexes which includes the sinuosity of the mountain in-front (SMF) Ratio of valley floor width to valley height (VF), Drainage Asymmetry factor (AF), Stream Length-Gradient Index (SL), Transverse Topographic Symmetry Factor (T), Fan Comicality Index (FCI), the region in terms of tectonic activities were assessed. Through combination of these indexes, the index of active tectonic (Iat) can be obtained. The results show that according to the (Iat) amounts, Garmsar alluvial fans are placed at the medium level of neo tectonic activities. The obtained geomorphologic evidences such as elevated river terraces, sequence of alluvial fans, changing base surface of Heble Roud and existence of old terraces and deepened channels confirms the results of the study.

Keywords: Heble Roud Basin, Morphology, Neo tectonics, Geomorphic indexes.

Assessing the Capability of Adaptive Neuro Fuzzy Interference System (ANFIS) in Estimating the Amount of Suspended Sediment Load and its Comparison with Two Models of Artificial Neutral Fuzzy Inference System Case study: Zarine rood, South east basin of Urmia Lake

Dr. Alimohamad Khorshiddoost

Professor of Natural Geography
University of Tabriz

Dr. Mehdi Feyzolahpour

Assistant Professor of Geography
University of Zanjan

Sahar Sadrafshary

Ph.D Student of Climatology
University of Zanjan

Load sediment transport in rivers is important according to their role in pollution, Reservoir filling, hydroelectric equipment life, Fish and other hydrological issues. Direct measurement of suspended sediment load in rivers is expensive and construction of measurement stations along the river is not possible. The equations used to estimate the sediment load are not applicable for all areas and also require long-term monitoring. In this study, to estimate daily sediment load, the Neural Fuzzy Inference System (ANFIS) is used. For this, daily discharge and suspended sediment load data of 365 days of years 2007 and 2009 of Zarine rood located in the south east of Urmia Lake is used for training and testing the Artificial Neutral Fuzzy Inference System. Southeast basin of Urmia Lake due to its hydrological and litological conditions have high rates of sediment production .ANFIS model is a nonlinear model and this is a great advantage. Note that the suspended sediment load also follows a linear relationship, so this model can achieve more accurate and more realistic results. This model of the multilayer Perceptron model (MLP), Neural networks, radial basis function (RBF), and sediment measures curve (SRC) has been used in these estimates. The results of ANFIS model is compared with the above models.

To determine the model efficiency, the mean square error factor (RMSE) and explanation error (R^2) was used and it can be seen that the ANFIS model achieves better results than the other models.

Keywords: Load sediment transport, ANFIS, MLP, GRNN, RBF, SRC, Zarine Rud River.