

ABSTRACTS

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Bandar -Turkman Population Development Trend during 1956-1996 and its Future Horizon

Awareness of societies demographic changes and developments is imperative for any kind of planning for them, because all economic, social, and cultural aspects of those societies have been linked to the number of population and its structural characteristics. This article is aimed at considering Bandar-Turkman's demographic developments as one of the small towns of the country, and analysis of the developments trends, recognition of reasons and its effective factors in order to have a better understanding of the status quo, and provision of a suitable ground for the future plannings. To achieve the aim, first statistical data related to the city in all periods of census were extracted and while the tables were provided, the related charts were drawn with the assistance of the Excel software, then they were analysed by numerous demographic formulas. The obtained results show that national and occasionally international politics had the most negative or positive impacts on this city demographic growth and structure development. In other words, this city has not yet reached its role finding and enough maturity, and its developments have always been under the shadow of the central government or indirect national policies. The coordination of city's population growth with other country's urban areas, population adolescence, the upward trend of the educated rate, the unemployed and services section's employees, and the downward trend of gender ratio, the ratio of the employed in the industry section in particular are other results of this research.

Key Words : Hurried urbanization, Modernism, Population constitution, The pecking order system of cities.

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The Analysis of Geomorphology of Landslides in Maku Region

Landslides or massmovements are the phenomena which happen in the process of geomorphologic transformations. These phenomena are a kind of destruction and denudation which take place as a result of the interaction between internal and external forces of the earth (M. 1988), and are a split process which their activity is heightened by some factors such as heavy rainfalls, earthquakes, tectonic forces and so on. Under specific conditions, this is likely that landslides occur as a result of the human activities.

Destroying forests, building roads and dams and any other measures are taken on slopes without familiarity with the dynamics of the environment, are all considered as the instability factors of the slopes and occurrence factors of the landslides.

Key Words : Landslide, Slopes, Instability of the slopes, Maku.

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Studies of Hydrological Regims of Ferezi River & it's Role in Feeding Mashhad Plain Aquifer

In this paper, we use statistical methods and existing softwares to show the relationship between climatological and hydrological components of the watershed basin of ferezi river. This research shows that in the aforesaid basin, distribution of the precipitation in winter and spring is influenced by the altitude and geographical situation. Also, hydrological regim of the river is alternative and is affected by the kind and seasonal changes of rainfall and snowing which is over flowing with the beginning of snow fusion and spring showers. Analysis of pizometric map of alluvial fan area, shows that annually, increasing valume of flood water, infiltrate in lower part of river aquifer and feed it. With regard to continuous drawdown of underground water surface of the region and deficiency of water supply, it is possible to feed it artificially and strengthen potential of underground water with river flood.

Key Words: Hydrologic, River ferezi, Aquifer, Mashhad.

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Quantitative Analyses of Saeed - Abad- Chay Basin Run off

Saeed-Abad - Chay basin is one of the basins which is situated in the northern hillside of the Sahand Mountains ranges in north-west of Iran. The area of this basin is about 215 square kilometers and is a sub-basin of Aji-chay which leads towards the orumiyyeh Lake.

In this study, medium isorain lines and also isorain lines with return periods of 25 and 100 years, have been prepared for the purpose of analyzing the amount of rainfall.

Regarding the difficulty of determining the effective elements on run off such as evaporation, transpiration, cesspool storage, interception, infiltration and the moisture of the soil, long -term period was selected to estimate the amount of run off since the effect of various elements is approximately constant in this period.

To study the relationship between seasonal and annual rainfall and run off of Saeed-Abad Chay basin, the statistical period of common rainfall and run off in (1970-1971) to (1996-1997) has been used except for (1995-1996) because of unavailability of statistics. To obtain models prevailing on seasonal and annual rainfall and run off of Saeed-Abad Chay basin, different kinds of models have been used such as: simple process model, simple temporal series model, multisentential model, simple linear model (SLM), and run off coefficient model with seasonal changes. In most cases, second and third degree multi-sentential have revealed a better fitting comparing with the other equations.

Key Words:Run off, Rainfall, Simple process model, Basin, Probability distribution, Return period.

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Temperature Trends in Iran during the Last Half Century

Iran is located in the mid latitude dry zone. The annual mean temperature of the country is about 18 degree Celsius. During the past 50 years, we have seen positive and negative trends in temperature time series in Iran. In order to evaluate the trends, monthly temperature records from (according nightly, daily and circadian temperatures) Jan 1951 to Dec 2000 were examined using about 414000 observations throughout Iran. Kriging interpolator was applied to this data-base, monthly isothermal map of the whole country with a resolution of 15*15 Km have been made. So each map consists of 7238 pixels. In order to detect the spatial pattern of temperature trends, time series of nightly, daily and circadian temperature over every pixel of the isothermal maps have been analyzed using least squares regressions.

This trend analysis suggests that the annual mean temperature of Iran shows that during the last half century the nightly, daily and circadian Iran's temperature has been increased respectively with a regularity about 3,1,2 degree Celsius per century. The increasing temperature trends are mainly seen in hot lowlands and decreasing temperature mainly in mountain ranges.

Key Words : Trend analysis, Iran, Temperature, Interpolation.

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Investigation of Wetland Plants Role as a Natural Treatment for the Urban Polluted Water in Tehran, With Artificial Canebrake

Human has been suffering significantly from the pollution in their environment, caused by climatic changes. Water pollution, is one of the major pollution sources to our living environment, which considering to freshwaters shortage has direct effectiveness on the country's progress.

Investing on water quality treatment is therefore vital to every society, as well as to our country and enforce considerable expenses to cities and countries.

Based on climatic conditions, social activities, and economical potentials, a substantial research is required for implementing a new methodology for any water quality treatment project. One of the best solution to the existing problems can be natural system of water treatment by means of wetlands. The proposed method is simple, economical, technical, low- consumption energy and very much effective for improving quality our living environment.

Therefore, in this research, the role of wetlands in sewage treatment was studied. Also the performance and the efficiency of a pilot- scale subsurface constructed wetland with *Phragmites Australis* to treat in Tehran is recommended.

The results reveal that this method can reduce $BOD_5(19 \pm 4 \text{mg/L})$, $COD(40 \pm 3 \text{mg/L})$, $TSS(36 \pm 20 \text{mg/L})$, Laver of drinking water standards and reduce "Fecal Coliform" more than 99 percent.

Key Words : Natural treatment of wast-water, Urban sewage treatment in Tehran, Wetland plants, Natural wetland plants, Artificial wetlands, Sub-surface flow.

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Slum -dwellers, Solutions and its Special – Civil Abnormalities Case Study: Karimabad Zahedan

The unmethodical and unsteady expansion of cities area is one of the contemporary problems of a city and urban dwelling so that city's physical and special limits have qualitatively and quantitatively developed in vertical and horizontal directions in a continuous process, and if this trend is become rapid and unplanned, it will be led to a disorderly combination of problematic urban spaces. The current of urban development in Iran during the last thirty years gave rise to the doubling of urban dwelling population and practically, its speed has strongly overtaken the capability of government and municipalities in expanding sub-structures, services presentation and creation of urban employment.

Zahedan city, as the largest city in the south east of Iran, has had one of the most irregular trends in development and urban physical expansion during the last three decades; its population increased from 93740 in 1976 to 532270 in 2003. Actually, on the average has had 6.6 percent growth, and at present time about $\frac{1}{3}$ of its urban population are slum-dwellers. Anyway, most of the population are living in poverty and absolute idleness which causes the accession of the informal habitations and special- physical abnormalities in city's points.

Karimabad, in the east part of Zahedan is one of Zahedan's slum-dwellers region that about 35 percent of its population are Afghan emigrants and 65 percent are rural emigrants who have come from other areas of Sistan and Baluchestan province to Zahedan. The majority of Karimabad's population have been absorbed in the unofficial economy due to the low level of education and skills. Fifty eight percent are involved in parasitic jobs. so that the residential space percapita is 17 sqm and the total Karimabad urban percapita is 27.2 sqm, 76 percent of households live only in one or two rooms, and 80.7 percent of residential units lack building licences.

The accumulation of garbage and the existence of open sewage channels and unsanitary spaces lead to the outbreak of various kinds of diseases which is one of the reasons of slum dwelling's special-physical impacts. The research results show the necessity refinement and wards enrichment for Karimabad of Zahedan which is especially mentioned in the main text of this article.

Key Words: City, Horizontal development, Slum-dwellers, Anomaly, Karimabad, Zahedan.

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The Organization of Recycling Industries for Redundant Solid Materials in Mashhad and the Need to Create a Recycling Township

The garbage separation debate at source and recycling the existing valuable materials in urban garbage and reusing them is at issue from different aspects such as hygienic, environmental, economic, job creation and etc aspects. Nearly, in all Iranian cities, the separation of recyclable material is unofficially carried out by the private sector. In Mashhad, separation is done by unauthorized small units and mostly non- standard methods. The recycling cases mostly include paper, cardboard, and plastics separated from the garbage. The Mashhadian workshops and existing industries in the field of recycling are also largely involved in this industry. Except bread which is largely consumed as food for animals, other components are transformed after entering one or two processes; those are either turned to a new product or become the raw material for other recycling goods.

In addition to, garbage stealing, gathering or illegal separation in different localities such as garbage transference stations, garbage bins, outside dumping places are carried out and different materials are recycled. In this case, the garbage gathering has no benefit for the public sector, and because of lack of observation on gathering, numerous hygienic - environment harms are caused. For example undesirable and unsanitary usage of these materials in factorries and recycling industries and untruthful jobs are some of these damages.

In this article, after studying different cases of solid material recycling in Mashhad to reduce urban service's costs, and proposals to create recycling industries for Mashhad and the location of these industries. This will reduce the Mashhad garbage transportation expenses, and organizing city's limits and margins and also reducing environmental damages originating from non - scientific garbage recycling, Mashhad. Determination of the recycling components and estimation of each components in Mashhad garbage and cognition of the physical texture of Mashhad garbage and determination of recycling industries and justification of scientific-economic of this industry in Mashhad is the main goal of this article.

Key Words : Recycling industries, Organization, Redundant solid materials, Recycling Township.

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A Survey on the Relations of the Northern Hemisphere Large Scale Circulation Patterns with Sistan & Baluchestan Annual Droughts

The term "Telecommunication Pattern" refers to a occurrence and persistence, large-scale pattern of pressure and circulation anomalies that spans vast geographical areas. Although these patterns typically last for several weeks to several months, they can sometimes be prominent for several consecutive years, thus reflecting an important part of both the interannual and interdecadal variability of the atmospheric circulation. These patterns influence on atmospheric wave, jet streams, rainfalls and storm directions, so most of them cause pneumatic patterns of anomalies which happen coincident on further districts.

Many of the telecommunication patterns are also planetary-scale in nature, and span entire ocean basins and continents.

Severe droughts are from notable features of hydro-climatology in Sistan & Baluchestan province (South-east of Iran). From a regional perspective, the ongoing drought is the most severe in the past several decades.

In this paper we analyzed the relationship between Sistan & Baluchestan droughts and the northern hemisphere circulation patterns that in this paper are described as telecommunication Pattern (TP). Statistical correlations at $\alpha=0.01$ and $\alpha=0.05$ levels are calculated for annual Standard Precipitation Index (SPI) of region and major stations and contemporaneous annual telecommunications indices values.

Totally in an annual perspective; POL, PDO, NP, NOI, MEI and WHWP have a significant correlation (at least at 0.05 level) with SPI variation. NHTP can be explained over 70% of SPI variance of region. In drought years ($SPI < -0.5$) TNH and PT explained over 61% of SPI variance.

Based on the stepwise multivariate Regression model, the most effective patterns were determined. Also the impact of NHTP on the drought severity and precipitation shortage was evaluated. For example, 1 unit increase in MEI, NOI, POL, NP, PDO and WHWP can increase the annual drought severities by 26, 12.3, 32.5, 24, 16.6 and 7 percent.

The regional response to these patterns differ from region to region. The impacts also shown some seasonal variation. Some patterns have effective presence in some season and in some seasons several patterns controlled the climatic conditions of Sistan & Baluchestan.

Key Words: Telecommunication, Climatic anomalies, Regression models, Widespread droughts, Jet streams, Scandinavian patterns, North Atlantic oscillation, Arctic oscillation.

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**The Role of Government in the Development of Communication Network
and its Effect on the Change of Rural Transport System in Iran With
Emphasis on the City and Village Connection
(Case: Golestan Province)**

The roads and telecommunication systems, as the connective elements between residential areas, have an important role in exchange of currents between urban and rural settlements. In the second half of this century, theoretically, relations between cities and villages in Iran were explained according to the theory of "Renten Capitalism". But during the recent decades it was questioned by "Government and Urbanization theory".

This article discusses emphasis the role of government in the development of communication network and its effect on the changing of rural transport system.

The findings show the magnificent effect of the development of communication networks on changing rural transport system are as follows: 1- in 2004, from the total of 9844 active transportations in 742 rurals in Golestan province this rate increase to 82.9 percent for motorcars and 76.3 percent for vans. But the 57.3 percent of rurals without asphalted roads hasnot any transportations. More than 79.5 perecent, were working in the villages using asphalt roads. 2- Another important point is the foundation of tele - taxi agencies (more than 113 tele - taxi agencises in 73 villages were opened up becaus of communication systems construction in 738 villages of the province, with 516 motocars about 2890 goods and passengers are serviced daily. About 42 percent of these passengers go to urban points, 31 percent to another villages and 27 percent go through their accommodations.) 3- other important findings of the survey point out the reduction in travel duration and increase in the number of daily transportation, which is double in number in asphalted roads. Therefore, more than 91.5 percent of passengers transport in rural- urban points is made by rural asphalted roads during a year.

Key Words : Communication network, Transport system – urban and rural interaction, Renten Capitalism, Government and Urbanization, Government and rural Development, Rural tele – taxi agency.