Analysis of Human Habitat in Tehran Based on SoE

Elham Shahi
MA in Environment, Faculty of Environment, University of Tehran, Tehran, Iran
Lobat Zebardast
Assistant professor of environment, Faculty of Environment, University of Tehran, Tehran, Iran
Esmail Salehi[*]
Associate professor of environment, Faculty of Environment, University of Tehran, Tehran, Iran
Reza Salehi
PhD candidate in urban planning, Islamic Azad University, Science and Research Branch, Tehran, Iran

Extended Abstract

Introduction

The importance of urban environments as the main settlements for people is increasingly growing in recent years. High population density in urban areas has led to environmental degradation; therefore, special attention must be paid to habitat quality in these areas. Today, Tehran is high density and the largest human settlement on Iran plateau. It has been established in one of the best natural and climatic conditions of Iran plateau. It seems that over two hundred years, environmental, natural and geographical conditions as well as ecosystems around the city have been changed in such a way that not only it cannot be considered as an integral part of its surrounding ecosystem, but it is even faced with many problems to provide human biological needs and social demands. DPSIR approach, which starts with a chain of causal linkages of "driving forces" (cause) through "pressure", i.e. pollutants, on logical "status" (physical, chemical, and biological) and the "effects", can eventually lead to "responses" (strategies) in ecosystems (structure and function). DPSIR was developed from PSR model by Europe Environment Agency (EEA). This was the most comprehensive model used to prepare environmental status reports (SoE). This model can be used via an applied approach as a tool to develop action and management plans. The purpose of this study is to identify the cause and effect chains as well as analyze the environment of human habitats in Tehran city using driving force, effect, status, pressure, and response model.

Methodology

This was performed as an analytical descriptive study based on DPSIR model using library studies and statistical analysis in 2013. The framework (DPSIR) used in this study, as one of the causal-effect models, can determine driving force of most of human factors leading to an environmental problem. These factors were normally associated with socio-economic

[*] Corresponding Author, Email: tehranssaleh@ut.ac.ir   Tel: +989123752788

development and require use of environmental resources. Excessive use of resources has led to laying pressure on the environment, consequently changing the situation of environmental parameters. These changes led to adverse effects on human and ecosystem well-being. There is a need to offer appropriate responses from the community to resolve these changes. This study was a part of the second environmental situation report on Tehran city, in which the various components of the human habitat in Tehran city were analyzed using the DPSIR model. Using this conceptual framework, appropriate responses in terms of model components were presented. To achieve a quantitative approach for the analysis of cause-effect factors affecting the human habitat characteristics of Tehran, quantitative indicators were determined for each of the model components (DPSIR). To determine these parameters, literature review was applied and all indicators in the other metropolise habitats as well as similar documents were evaluated, then appropriate indicators were selected for each model component.

Results and discussion
The results of investigating the habitat components in Tehran city in form of driving force, effect, status, pressure and response (DPSIR model) indicated that the most important development features of Tehran city in recent times can be described as "rapid urbanization", as the development of the city over the last half century did not followed any discipline and in this viewpoint the city is regarded as an exception among the metropolises of the world. Accordingly, this can be considered as the root and driving forces of almost all environmental issues of the city. Under the direct influence of the driving force of rapid urbanization, pressure on ecological and natural resources of the city and its surroundings is high due to the high volume of urban travels and increasing waste and runoff production. However, the main driving force of the rapid urbanization is reflected in housing and construction, major land uses, situation of worn-out areas, transportation condition, green space, urban leisure centers and public health. Therefore, for all the variables assessed in this regard, despite having relatively positive trends, the city is not consistent with ideal standards. Also the most important effects of desirable and undesirable conditions of the major components of a habitat were reflected in two forms of pollutions and public health. The main effect of pollutions in Tehran city is air pollution, followed by water pollution, vision and perspective pollution, and noise pollution. In public health, mortality and general health indicators reflect the impact of adverse environmental conditions of the city on citizens. The response is adopted measures to reform the system and usually acts in the form of rules and control measures. Adopted responses were made in form of three parts including adopted policies and strategies, activities, and studies to present required policies and strategies for reform.

Conclusion
Population establishment and establishment of working centers as well as the activities associated with framework indiscipline (in the absence of effective regulations) were among the most effective indicators as the driving force of habitat in Tehran city. Among the most important responses in the form of adopted policies and strategies are: t publication of the first report on environmental situation o Tehran, approval of structural strategic comprehensive plan of Tehran city in 2008, approval of the detailed plan for Tehran city in 2009 and commitment to prepare practical plan of Tehran Municipality, preparation of the report on environment status of Tehran, compilation of the atlas of Tehran, formulation of a plan for organizing gardens and green spaces in Tehran, implementing several measures in response to increasing urban journeys to enhance public transportation. Despite the measures taken as responses, investigation and analysis carried out in the form of human habitat DPSIR model in Tehran

suggests that the responses do not have efficiency and effectiveness because they did not focused on the driving forces. Therefore, environmental managers and planners in Tehran city need to focus on driving forces by revising their policies and plans in order to mitigate environmental issues.

Keywords: human habitat, DPSIR model, human settlement, status of environment, SoE.