



Urban Sustainable Development Strategies in the Tehran-Alborz Region

Parvaneh Sobhani^{1*} , Afshin Danehkar² 

1. Assistant Professor, Department of Environmental Science, Natural Resources Faculty, Lorestan University, Khorramabad, Iran.

2. Professor, Department of Environmental Science, Natural Resources Faculty, University of Tehran, Karaj, Iran.

Received Date: 24 January 2026 Accepted Date: 15 May 2026

Abstract

Background and Objective: The Tehran-Alborz urban complex faces numerous environmental problems due to its large population and rapid urbanization growth. Thus, planning for the development of human activities should be done in a way that causes the least damage to the region and its urban environment. In the present study, strategic planning and identification of environmental strategies were addressed in the macro-vision of the development of the Tehran-Alborz urban complex with the aim of achieving optimal management in the exploitation of natural resources.

Methodology: In this study, management strategies in sustainable urban development planning were identified and formulated using the SWOT-PESTLE model. The methodological steps of the present study include "identifying and analyzing strengths, weaknesses, opportunities, and threats", "preparing an internal and external evaluation matrix", "scoring internal and external factors in the form of a 5-point Likert scale", "determining strategic position (SO, ST, WO, WT)", "formulating and prioritizing strategies according to the opinions of specialists and experts and using the ANP weighting model.

Results and Findings: According to the results, among the internal and external factors, threat points have the highest score with a sum of -0.525. Also, external factors (opportunities and threats) with a total score of 0.091 have a higher score than internal factors (strengths and weaknesses) with a total score of 0.042. Also, the proportion of strategies in each of the strategic areas includes 29 percent of the status quo strategy (WT), 24 percent of the participatory development and empowerment strategy (WO), 26 percent of the performance improvement strategy (ST), and finally 23 percent of the comprehensive development strategy (SO). Therefore, the strategic position of the Tehran-Alborz urban complex is equivalent to the "WT" strategy, considering the percentage allocated to each of the strategies. According to the strategies presented in this study, the strategic and management planning of the Tehran-Alborz urban complex strives to help planners and decision-makers achieve integrated management and formulate development models based on the ecological potential and biological capacities of the region and control and manage environmental threats to protect natural areas and biological resources for the benefit of present and future generations.

Keywords: Strategic planning, Spatial strategies and policies, Prioritization of strategies, Tehran-Alborz urban region.

* Corresponding Author Email: sobhani.pa@lu.ac.ir

Cite this article: Sobhani,P. and Danehkar,A. (2026). Urban Sustainable Development Strategies in the Tehran-Alborz Region. Journal of Sustainable Urban & Regional Development Studies (JSURDS), 7(3), 52-71.

EXTENDED ABSTRACT

Introduction

The Tehran-Alborz urban complex is facing numerous environmental problems due to its large population and rapid urbanization. Accordingly, planning for the development of human activities must be carried out in a way that causes the least damage to the region and its urban environment. In recent decades, the environment and the need to protect it have received the attention of many international and global communities. The excessive development of human economic activities on the one hand, and the direct reliance and livelihood dependence of a large part of the world's growing population on nature on the other, have day by day confronted the natural environment with numerous challenges. In this regard, "strategic planning and management" is one of the most important pillars of management systems in integrated land planning and achieving the principles of sustainable development. Strategic management is the art and science of formulating, implementing, and evaluating decisions and multiple tasks in order to protect the environment. In strategic planning, the basic principle is to benefit from external opportunities and avoid the effects of external threats and to formulate strategies. On the other hand, in formulating strategies, the goal is not to determine the best strategy, but rather to determine strategies that have the ability to be implemented. Urban network and regional development play key roles in the strategic and operational planning of cities. These two concepts are particularly influential in determining long-term goals, designing sustainable development policies and strategies, and implementing operational plans for the management and distribution of resources and services in different cities and regions.

Methodology

In this study, the SWOT-PESTLE model was used to identify environmental strategies in the macro-development perspective of the Tehran-Alborz urban complex with the aim of achieving optimal management in the exploitation of natural resources. The SWOT matrix is currently used effectively in the strategic planning process and its analysis is carried out before formulating strategies. This analysis includes the internal and external effects of the area and planning the effects of development in the future. In the present study, strategic factors were identified through document review and preparation and completion of a questionnaire. Subsequently, the Internal Factor Evaluation (IFE) and External Factor Evaluation (EFE) matrices were used to evaluate internal and external strategic factors. Then, the strategic position of the region was determined and strategies were formulated and prioritized.

Results and discussion

According to the results, among the internal and external factors, threat points have the highest score with a sum of -0.525. Also, external factors (opportunities and threats) with a total score of 0.091 have a higher score than internal factors (strengths and weaknesses) with a total score of 0.042. Also, the proportion of strategies in each of the strategic areas includes 29 percent of the status quo strategy (WT), 24 percent of the participatory development and empowerment strategy (WO), 26 percent of the performance improvement strategy (ST), and finally 23 percent of the comprehensive development strategy (SO). Therefore, the strategic position of the Tehran-Alborz urban complex is equivalent to the "WT" strategy, considering the percentage allocated to each of the strategies.

Conclusion

The strategic plan for the Tehran-Alborz urban complex, through capacity assessment (balancing and balancing in the development of macro-utilities), sensitivity assessment (monitoring and restoration of biological resources), and impact assessment (management and control of environmental risks and pollution), strives to assist planners and decision-makers in developing integrated and multi-purpose management to achieve sustainable development in this region. Therefore, the necessary missions to achieve these goals can include developing a local ecosystem management plan within the framework of biological resource capacity, threat management (control of pollutants, destruction and reduction of resources) and prediction of environmental hazards (risk of landslides, landslides, floods, subsidence and storms), improving the level of cooperation and coordination between relevant organizations, organizing, empowering and strengthening the participation of environmental activists, local communities and non-governmental organizations, conservation planning to develop participation, organizational cohesion and empowerment of local communities and control and management of the consequences of development compatible with the biological capacity and climate of the region. According to the results obtained and the strategies presented in this study, strategic and management planning of the Tehran-Alborz urban complex can help planners and decision-makers achieve integrated management and develop development models based on the ecological capacity and biological capacities of the region, as well as control and management of environmental threats to help protect natural areas and biological resources.

Declarations

Funding

The present research is based on the "Tehran-Alborz Urban Complex Plan" (No. 300/68048 QP with notification letter No. 300/88198 dated 05/06/1401 to the honorable Deputy of Urban Planning and Architecture of the Ministry of Roads and Urban Development and the Iranian Center for Urban Planning and Architecture Studies and Research as consultants).

Authors' Contribution

The authors have contributed to this article.

Conflict of Interest

The authors declare no conflict of interest.

Acknowledgments

We are grateful to all the scientific consultants of this paper.

References

- Abedi, S., & Anisi, M. (2024). Strategic planning to reduce the social cost of air pollution in Tehran caused by intra-city buses. *Environment and Cross-Sectoral Development*, 9 (84), 21-40. (In Persian) <https://doi.org/10.1108/JMD-08-2023-0258>
- Acheampong, A. O., & Opoku, E. E. O. (2023). Environmental degradation and economic growth: Investigating linkages and potential pathways. *Energy Economics*, 123, 106734. <https://doi.org/https://doi.org/10.82247/jebr.1209011>
- Areseh, Consulting Engineers. (2010). Strategic studies on the development of the Karun waterway, part three: studies on the assessment of strengths, weaknesses, opportunities and threats (SWOT analysis). <https://doi.org/10.3389/fpubh.2020.00341>.

- Asadi Mehr, S., & Orak, N. (2024). The Role of Planning in the Sustainable Development of Urban Space. *Eurasian Journal of Chemical, Medicinal and Petroleum Research*, 3(3), 745-761. <https://doi.org/10.1002/csr>.
- Ashktorab, N., Nematollahi, Z., & Chabokroo, G. R. (2020). Investigating the Development Strategies for Agricultural Commodity Stock in Fars Province: Integrating the SWOT Method with Analytic Hierarchy Process. *Agricultural Economics Research*, 12(45), 69-90. (In Persian) <https://www.sid.ir/paper/399783/fa>
- Awewomom, J., Dzeble, F., Takyi, Y. D., Ashie, W. B., Ettey, E. N. Y. O., Afua, P. E., & Akoto, O. (2024). Addressing global environmental pollution using environmental control techniques: a focus on environmental policy and preventive environmental management. *Discover Environment*, 2(1), 8. <https://doi.org/10.22059/jsm.291842.2354>
- Bartek, L., Bergquist, D., Garcia-Caro, D., Malefors, C., & Eriksson, M. (2025). Sustainability beyond buildings: Assessing environmental impacts of Swedish urban life using LCA and energy indicators. *Cleaner Environmental Systems*, 100343. <https://doi.org/10.1016/j.cesys.2025.100343>
- Benites, A. J., & Simoes, A. F. (2021). Assessing the urban sustainable development strategy: An application of a smart city services sustainability taxonomy. *Ecological Indicators*, 127, 107734. <https://doi.org/10.55081/jpj.v4i3.2186>
- Cheng, Y., Kang, Q., Liu, K., Cui, P., Zhao, K., Li, J., & Ni, Q. (2023). Impact of Urbanization on Ecosystem Service Value from the Perspective of Spatial-Temporal Heterogeneity: A Case Study from the Yellow River Basin. *Land*, 12(7), 1301. <https://doi.org/10.22034/envj.2025.542220.1544>
- Danekar, A., Sobhani, P. (2024). Assessing the ecological potential and balancing the development of macro-uses in the Tehran-Alborz urban complex. *Geographical Spatial Planning*, 14 (4), 37-57. [In Persian] <https://doi.org/10.1016/j.jclepro.2021.127039>
- Di Nauta, P., Iannuzzi, E., Milone, M., & Nigro, C. (2020). The impact of the sustainability principles on the strategic planning and reporting of universities. An exploratory study on a qualified Italian sample. *Sustainability*, 12(18), 7269. <https://doi.org/10.30495/kmsj.2022.1973723.1058>
- Faraji Sabokbar, H. A., Salmani, M., Fereydouni, F., Karimzadeh, H., and Rahimi, H. (2010). Locating sanitary landfills for rural waste using the Analysis Network Process (ANP) model: A case study of rural areas in Quchan County. *Planning and Spatial Planning*, 14 (65), 127-149. (In Persian) <https://doi.org/10.1080/17430437.2024.2325970>
- Farhadinia, M. S., Jokar, H., Danehkar, A., and Joorabchian, A. R. (2015). Strategic Management of Asiatic Cheetah in Iran. *Environmental Research*, 6 (11), 192-181. (In Persian). <https://doi.org/10.1093/cdj/bsad001>
- Fouladi, A., Behbahaninia, A., Azad Bakht, B., Motahari, S. (2014). Developing a Strategic Urban Development Planning Model for Promoting Environmental Security (Case Study of Tehran). *Environmental Science and Technology*, 24 (3), 287-271. (In Persian) <https://doi.org/10.30473/fmss.2025.70239.2580>

- Ghasemzadeh, R., & Yazdani, M. H. (2026). Measuring the Efficiency of Managerial Strategies in Improving Urban Livability in Tabriz Metropolis. *Journal of Sustainable Urban & Regional Development Studies (JSURDS)*, 7(2), 188-206. https://www.srds.ir/article_231234.html
- Golshiri Esfahani, Z., and Sarai, M. H. (2010). Strategic planning of the rural environmental system with SWOT analysis (Case study: Gandoman district, Borujen city). *Rural Research*, 1 (4), 73-98. (In Persian) <https://doi.org/10.22059/JTCP.399801.670515>
- Hajat, M., & Varnaseri, M. (2023). Investigating the impact of citizen participation and its role in the development and improvement of urban services. Third National Conference on Applied Ideas in Educational Sciences, *Psychology and Cultural Studies*. (In Persian) <https://sid.ir/paper/1059459/en>
- Hariram, N. P., Mekha, K. B., Suganthan, V., & Sudhakar, K. (2023). Sustainalism: An integrated socio-economic-environmental model to address sustainable development and sustainability. *Sustainability*, 15(13), 10682. <https://doi.org/10.30473/fmss.2025.70239.2580>
- Hamdi, K., & Amir-Entekhi, Sh. (2010). Greater Tehran Metropolis and the Challenges of Urban Management. *Geographical Land*, 26, 1-13. (In Persian) <https://www.sid.ir/paper/459318/fa>
- Heydari, F. (2024). Strategies for the Environmental Structure of the City with a Sustainable Urban Development Approach (Case Study: Karaj City). The Third International Conference on Creative Achievements in Architecture, Urban Planning, *Civil Engineering and Environment in Sustainable Development of the Middle East*. (In Persian) <https://doi.org/10.1016/j.jclepro.2021.127039>
- Heydarzadeh, H., and Danehkar, A. (2015). Developing Green Space Management Strategies for Region 2 of Karaj City. *Environmental Studies*, 6 (11), 159-172. (In Persian) <https://search.isc.ac/inventory/8/866772.htm>
- Hoveidi, H., Nasehi, S., Imanpour, N., & Nohegar, A. (2019). Strategic Planning, Based on Environmental Spatial Assessment, Using SWOT and GIS to Locate Sustainable Industrial Areas (Case Study: Tehran Province). *Pollution*, 5(3), 569-583. <https://doi.org/10.22067/GEOEH.2023.82599.1372>
- Huo, J., & Peng, C. (2023). Depletion of natural resources and environmental quality: Prospects of energy use, energy imports, and economic growth hindrances. *Resources Policy*, 86, 104049. <https://doi.org/10.1016/j.ecolind.2023.110957>
- Jaafari S, Sakieh Y, Dejkam S, AlavianPetruudi S, Yaghubzadeh M, Danehkar A. Developing of management strategies for conservation of Miankalehwetland by using SWOT analysis. *Wetland Ecobiology 2013*, 5 (2), 5-18. (In Persian) <https://www.sid.ir/paper/174754/fa>
- Jahani Shakib, F., Daneh Kar, A., Alipour, M., & Yousefi, A. (2015). Strategic educational planning of the Department of Environment, Faculty of Natural Resources, University of Tehran. *Natural Environment, Natural Resources of Iran*, 68 (2), 212-201. (In Persian) <https://civilica.com/l/106611/pgn-5/>

- Kalfas, D., Kalogiannidis, S., Chatzitheodoridis, F., & Toska, E. (2023). Urbanization and land use planning for achieving the sustainable development goals (SDGs): A case study of Greece. *Urban Science*, 7(2), 43. <https://doi.org/10.3390/su16093723>
- Khan, H., & Khan, I. (2023). The effect of technological innovations, urbanization and economic growth on environmental quality: does governance matter? *Frontiers in Environmental Science*, 11, 1239288. <https://doi.org/10.22059/JHSCI.2023.366567.797>
- Khazaei, M., and Sasanpour, F. (2013). Investigating the Process of Implementing the Strategic Development of Mallard City Using the Meta SWOT Model. *Land Planning*, 14 (1), 193-220. [In Persian] <https://doi.org/10.22059/JNE.2021.309286.2063>
- Kozegar Kaleji, L. A., Aghaei, P., and Saeedi, S. (2014). Improving the urban environment using SWOT strategic analysis in the oil club neighborhood with an emphasis on the smart growth approach. The 10th Conference on Modern Studies and Research in Civil Engineering, *Architecture and the Future City*. (In Persian) <https://doi.org/10.3390/hydrology10010016>
- Lidicker Jr, W. Z. (2020). A Scientist's Warning to humanity on human population growth. *Global Ecology and Conservation*, 24, e01232. <https://doi.org/10.3390/su16093723>
- Liu, X., & Xia, H. (2023). Networking and sustainable development of urban spatial planning: Influence of rail transit. *Sustainable Cities and Society*, 99, 104865. <https://doi.org/10.3390/su10030711>
- Nabader and Maritime Organization, Directorate General of Civil Engineering, *Tehran*, 1-151. (In Persian) <https://doi.org/10.3390/su12177083>
- Niu, M., Zhang, S., Zhang, N., Wen, Z., Xu, M., & Yang, Y. (2022). Progress in the research of environmental macroeconomics. *Sustainability*, 14(3), 1190. <https://doi.org/10.22067/GEOEH.2023.82599.1372>
- Maheshwari, A., & Chopra, S. S. (2025). Actionable insights for equitable urban sustainability transition through building-level assessment of sustainable development goals. *npj Urban Sustainability*, 5(1), 63. <https://doi.org/10.3390/su16093723>
- Moharam Nejad, N. (2006). Environmental management and planning. *Author, Tehran*, 1-344. [In Persian]
- Mosalai, M. R. (2007). Strategic planning: an approach to excellence. *Management Journal*, 39, 34-39. (In Persian) <https://doi.org/10.3390/w14193153>
- Pallathadka, A., Chang, H., & Ajibade, I. (2023). Urban sustainability implementation and indicators in the United States: A systematic review. *City and Environment Interactions*, 19, 100108. <https://doi.org/10.1007/s10980-021-01329-0>
- Plan for preparing and compiling a provincial planning program. (2009). Deputy of Planning of the *Tehran Governorate*, 1-73. (In Persian) <https://doi.org/10.22034/mr.2022.5133.4932>
- Plan of the urban complex of Tehran and its surrounding cities. (2000). Center for Urban Planning and Architecture Studies and Research, 1-89. (In Persian) <https://doi.org/10.22111/JNEH.2019.28320.1487>

- Putra, A. A., Hasibuan, H. S., Tambunan, R. P., & Lautetu, L. M. (2024). Integration of the Sustainable Development Goals into a Regional Development Plan in Indonesia. *Sustainability* (2071-1050), 16(23). <https://doi.org/10.22034/envj.2025.542220.1544>
- Rachid, G., & El Fadel, M. (2013). Comparative SWOT analysis of strategic environmental assessment systems in the Middle East and North Africa region. *Journal of environmental management*, 125, 85-93. <https://doi.org/10.1007/s10980-021-01329-0>
- Raihan, A., & Tuspekova, A. (2022). Dynamic impacts of economic growth, energy use, urbanization, agricultural productivity, and forested area on carbon emissions: New insights from Kazakhstan. *World Development Sustainability*, 1, 100019. <https://doi.org/10.52547/ENVS.2021.1017>
- Rezazadeh, M. R., Fani, Z., and Rezavian, M. T. (2019). Sustainability of the Urban Environment with a Tourism Approach (Case Study: Darakeh Neighborhood in Region One of Tehran Metropolitan City). *Geography and Urban Space Development*, 6 (1), 39-61. [In Persian] <https://10.22111/jneh.2024.46574.1987>
- Sheikhi, F., & Mohammadnejad, M. (2026). Critical Re-reading of the Rational Comprehensive Planning Approach (CRPP): Foundations, Challenges, and Lessons from Global Experiences. *Journal of Sustainable Urban & Regional Development Studies (JSURDS)*, 7(2), 250-269. https://www.srds.ir/article_236981.html
- Shobeari, S. M., Meiboudi, H., and Saradipour, A. (2012). Developing strategies for the development of environmental education in urban management with the SWOT matrix. *Urban Ecology*, 3 (6), 51-66. (In Persian) <https://doi.org/10.22059/JNE.2021.309286.2063>
- Singh, V. (2024). The Environment and Its Components. Textbook of Environment and Ecology. 10.1007/978-981-99-8846-4_1. <https://doi.org/10.22034/envj.2025.542220.1544>
- Singh, S., Shukla, A., & Jain, K. (2024). Assessing the urbanization-induced impact on environmental parameters of a city from a remote-sensing perspective. *Remote Sensing Applications: Society and Environment*, 34, 101169. <https://doi.org/10.22111/JNEH.2019.28320.1487>
- Sobhani, P., Danehkar, A. (2024). Strategic planning and prioritization of sustainable tourism development strategies in the mangrove forests of Khamair and Qeshm. *Geographical Studies of Coastal Areas*, 5 (2), 104-85. <https://doi.org/10.1016/j.marpol.2024.106480>
- Sobhani, P., Danehkar, A. (2025). Analysis of the Ecological Network Structure and Continuity of Biological Function in the Tehran-Alborz Urban Complex. *Quarterly Journal of Urban and Regional Development Planning*, 10 (33), 217-241. <https://doi.org/10.22054/urdp.2025.83888.1685>
- Sobhani, P., Esmailzadeh, H. (2013). Evaluating the Environmental Impacts of Development on the Geography of the Alvand No-Hunting Area by Presenting Optimal Strategies. *Environmental Research*, 12 (24), 53-66. [In Persian] <https://doi.org/10.3390/hydrology10010016>
- Sobhani, P., Esmailzadeh, H., Wolf, I. D., Marcu, M. V., Lück, M., & Sadeghi, S. M. M. (2023). Strategies to Manage Ecotourism Sustainably: Insights from a SWOT-ANP Analysis and IUCN Guidelines. *Sustainability*, 15(14), 11013. <https://doi.org/10.22059/JNE.2021.309286.2063>

- Sobhani, P., Liriai, L., Sayahnia, R. (2021). Identifying effective factors in sustainable tourism development and presenting a strategic model in Ramsar coastal areas. *Environmental Education and Sustainable Development*, 10 (1), 193-175. (In Persian) <https://doi.org/10.1016/j.ecolind.2023.110957>
- Taufik, M. J., Martono, D. N., & Soelarno, S. W. (2021). SWOT Analysis in Determining Environmental Risk Management Strategy in Medium Scale Nickel Laterite Mining (Case Study in PT Rohul Energi Indonesia). In IOP Conference Series: Earth and Environmental Science, 940 (1), 012023. IOP Publishing. <https://doi.org/10.22067/GEOEH.82599.1372>
- Vafaei, A. (2012). Sustainable environmental development with a strategic planning approach (Case study: Kashan city). *Human Settlement Planning Studies*, 17 (3), 691-708. (In Persian) <https://doi.org/10.22059/JHSCI.2023.366567.797>
- Wang, Z., Lin, L., Zhang, B., Xu, H., Xue, J., Fu, Y., & Li, F. (2023). Sustainable urban development based on an adaptive cycle model: A coupled social and ecological land use development model. *Ecological Indicators*, 154, 110666. <https://doi.org/10.3390/w14193153>