

INFLUENCE OF RURAL POPULATION ON URBAN LANDSCAPE PLANNING; CASE STUDY OF BARTIN CITY CENTER AND NEARBY VILLAGES

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Abstract

Sustainable urban landscape planning must regard the effect of the nearby rural population as well as the urban society for the decision making on the spatial organization and arrangement of the cities. The cities like Bartın where is immediately surrounded by the villages, are under the pressure of the sudden incoming rural population. In fact, the core nearby population within the 10 km distance is approximately 26% of the total local population of Bartın central city whereas the global nearby population within the mean 20.5 km distance slightly exceeds that total local population. However, the core city center is not suitable for adequately servicing public open space for such population flow; is able to offer relatively qualified public open space for the average 1,500 persons. On the other hand, the public open space of the global city center is to a certain degree available for 26,250 persons. Nevertheless, the spatial composition of the public open space within the core city center is dominated by the squares, tea gardens and pedestrian trails while the public open space of the global city center varies in characteristics including the cemetery yards, parks, orchards and, especially long riverside trails. Consequently, in order to acquire more public open spaces to meet the necessities of the prospective additional rural population, the remaining parts of the riverside landscape within the global city center should be introduced to serve as recreational fields. Ultimately, urban landscape planning projects should also be extended towards the urban periphery for sake of incorporating some of the isolated forest patches into the urban forestry.

Keywords: urban landscape, spatial planning, urban periphery, rural population, Bartın city center and vicinity.

1. Introduction

Urban landscape basically involves the natural and cultural components of a city together with their ecological integration fields (Steiner, 1999) within the certain visual boundaries. These natural and cultural components particularly form the urban land uses and therefore comprises the ecological networks among those land uses; ultimately constituting the urban landscape mosaic (Forman, 1995). Hence, urban landscape planning is actually the decision making primarily on the urban land uses considering not only their natural and cultural settings but also their ecological networks and social interactions among those land uses and surrounding environment (Turner & Gardner, 2015). Indeed, these integrated social interactions and their associated impacts are definitive on the urban landscape planning objectives. Therefore, sustainable urban landscape planning and design that consider the socio-economic structure of the urban and surrounding rural society, will be able to achieve coherent spatial organization and able to maintain harmonious urban design criteria in particular (Marsh, 2010). Nevertheless, particularly for the rapidly urbanizing and densely populated cities, proposed landscape and land use plans should be re-handled and revised (Sakieh et al., 2015). In addition, alternative landscape plans should be produced if required in order to adapt the prospective spatial reorganization and reconfiguration of the urban features.

Public open space is conceptually defined as the areal extent of a land serving the present society particularly to supply recreation (Randolph, 2004) and not covered by any of the shielding objects. Public open spaces constitute significant portion of the urban landscapes, which accommodate not only the local societies of the cities but also the external visitors such as the rural population around the urban vicinity. Indeed, urban greenery is included into the urban open spaces and most likely associated and referred with the urban open spaces. Because of their recreation potential, they play significant role for the public life within the cities in particular (Konijnendijk, 2008). Thus, the sustainability of these public open spaces must be ensured under the circumstances of sustainable urban landscape planning objectives and projects. Around this context,

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development and enhancement of these public open spaces is one of the major tasks and goals of urban landscape planning.

Central city of Bartın Province has many connected villages, most of which are located within the urban vicinity. This situation leads to the constant interaction between those nearby villages and the city center, increasing the tendency of the rural population to frequently arrive the city center for economic, educational and healthcare reasons in principle. The rural population usually uses the public open spaces during their facilities within the city center. However, both the core and global city centers hardly offer available open space opportunities for that rural population, since the existing public open spaces already narrowly suffice to the urban local population partially thanks to the more public open space in the global city center. Therefore, the purpose of this study is to analyze and evaluate the effect of the rural population from the nearby villages on the urban landscape of Bartın central city. This study also suggests sustainable landscape planning proposals in order to avoid the centralization particularly around the core city center and to spread the local and rural populations primarily towards the global city center and then towards the urban periphery.

2. Material and Method

2.1. Site Characteristics of Bartın Province

Bartın Province is located between the 32°07' and 32°56' eastern longitudes, between 41°20' and 41°50' northern latitudes at the northwestern Black Sea Region and covers 2,220 km² area (PDEU, 2018). Although the average altitude of the city center is 25 m asl., the topography of the province varies from coastal zones at the sea level up to the mountainous hillsides at the 1200 m asl. (Öztürk & Gökyer, 2015). More than half of the provincial area is covered by the forests (Gökyer *et al.*, 2015) whereas more than a quarter of this provincial area is dominated by the agricultural areas (PDEU, 2018). The remaining part of the provincial area is either urbanized and urbanizing or locally built and constructed. The region where the Bartın Province exists, is included into the humid mesothermal climate regime (Atalay, 2011; Öztürk *et al.*, 2017), with average annual total precipitation of 1033 mm and annual temperature of 12.6°C (TSMS, 2013; Öztürk *et al.*, 2017).

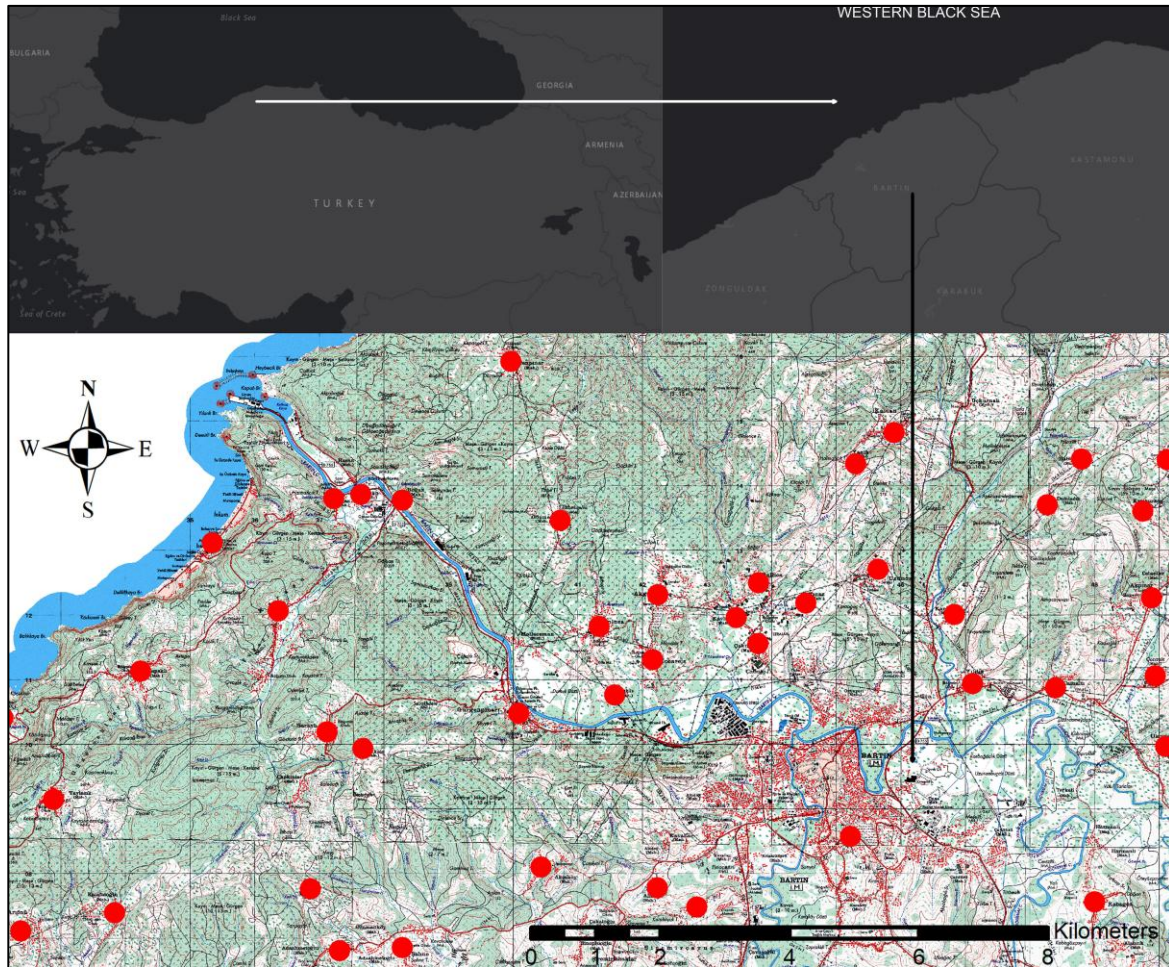


Figure 1. Location of Bartın Province within Turkey and some of the closest nearby villages to city center.

The central city of Bartın Province is at least 10 km away from the Black Sea. There are 80,965 inhabitants which correspond almost 41% of the total population of Bartın Province (198,999), and which are settled within the central city and connected two towns (TSI, 2019a). The inhabitant number of 137 villages connected to the central city, is 74,051 which correspond to about 37% of the Bartın Province total (TSI, 2019b). Bartın Province has three districts; Amasra, Ulus and Kurucaşile. Amasra and Kurucaşile are the coastal districts whereas Ulus is the internal district. Amasra with the central population of 6,085 (only 3% of Bartın Province total), is at least 16 km away from the Bartın city center and, has 30 connected villages (TSI, 2019b). The inhabitant number of these villages is 8,691, corresponding to only about 4% of the Bartın Province total (TSI, 2019b). Ulus is the second closest district with 37 km distance to the Bartın city center and, has 8,262 inhabitants (only 4% of Bartın Province total) within the city center and connected two towns (TSI, 2019b). There are 68 villages connected to the Ulus District where 14,071 inhabitants live, which correspond to about 7% of the Bartın Province total (TSI, 2019b). On the other hand, Kurucaşile is the furthest district with 64 km distance to the Bartın city center and has only 1,877 inhabitants corresponding to only almost 1% of the Bartın Province total (TSI, 2019b). There are 28 villages connected to the Kurucaşile District, where 4,997 inhabitants live, which correspond to only almost 3% of the Bartın Province total (TSI, 2019b).

2.2. Methodology

In order to determine the spatial effects of rural population who daily visits the Bartın city center, some of its' spatial and population characteristics should have been addressed to present the actual urban conditions and services. The determination of these spatial and population characteristics will also assist the exploration of alternative possible places that could accommodate the daily rural visitors compensating the existing spatial and social deficiencies, which then will support the prospective sustainable urban landscape planning. Hence, the spatial data indicating the connections within Bartın city center and between the nearby villages are based

on the explicit Google Earth maps whereas the estimation of the population data are based on the literature survey.

The methodology of this study involves the calculation of these spatial and population characteristics of the Bartın city center and the surrounding vicinity including the connected villages. These basic spatial characteristics are the areal and peripheral extent of the core and global city centers, and the approximate areal and peripheral extent of the actual public open spaces that are recently supplied to the local and rural populations. Besides, the areal and peripheral extent of the alternative open spaces that are recently serviced to the local population whereas, that would potentially be serviced to the rural population, are also included within these mentioned basic spatial characteristics. These spatial characteristics of the core and global city centers were calculated based on the maps.

On the other hand, both the spatial and population characteristics of the connected villages, which primarily and frequently transfer rural population to the Bartın city center for their definite proper purposes, were to some extent revealed based on the calculation of their locational distances and populations. At a definite trivium on the Hamam Street, the center point of the Bartın city was marked. The locational distances; road distances, between the nearby villages and this Bartın city center point were determined based on the GIS (Geographical Information Systems) analysis and calculations using the ArcMap 10.5 (ESRI, 2016) and physical settlement maps. Dependent upon their locational distances, they were also classified as core and global nearby villages, and their associated populations were also referred. The villages that are at up to 10 km distance from the Bartın city center point were accepted as core nearby villages whereas the villages within and more than 10 km distance were accepted as global nearby villages.



Figure 2. Location of core (red line) and global (yellow line) centers of Bartın city (modified from Google Earth image of April 23th of 2018) together with certain field photographs (original).

3. Results and Discussion

The basic spatial characteristics of the core and global centers of Bartın city (Figure 2), indicating the areal and peripheral sizes of their recent and alternative public open spaces, are stated in the Table 1. According to the Table 1, the areal extent of the global city center is approximately 9 times of the core city center whereas its' peripheral extent is almost 3 times (Figure 2). Although the core city center covers 34 hectares, it could only offer 3 hectares of public open space (Table 1), already one-fifth of which is shared by Cumhuriyet Square and surrounding open places (Bollukcu & Cengiz Gökçe, 2019). The remaining area of the already-limited public open space within the core city center, consists solely of few narrow squares and parks, tea gardens, pedestrian trails with pavements, and even barely the spaces around municipal parking lots, bus stops and sitting benches. However, out of those restricted spatial opportunities within the core city center, alternative public open spaces can be introduced particularly by the municipality, through pedestrianization and by uncovering some of the

public semi-open spaces. Yet these spatial opportunities scarcely attain 1 km area and 1.5 km peripheral extent (Table 1). In fact, streetscape designs especially for the riverside landscapes such as proposed by Cengiz (2012) in a study within the global center of Bartın city center, can also in some way be applied for the core city center in order to allow the pedestrian mobility along the riversides.

Table 1. Basic spatial characteristics of Bartın city center and vicinity.

Space	Areal Extent (ha)	Peripheral Extent (km)
<i>Core city center</i>	34	3.0
<i>Global city center</i>	301	8.5
Public Open Space		
<i>Core city center</i>	~3.0	~3.5
<i>Global city center</i>	~50	~30
Alternative P. Open Space		
<i>Core city center</i>	~1	~1.5
<i>Global city center</i>	~20	~10

The situation is to some degree different for the global center of Bartın city, which could provide more public open space relative to its' overall areal space (Table 1). Moreover, the characteristics of the public open spaces tend to vary expanding from the core to the global city center. This variability depends principally on the fact that the proportion of the natural environment to the built environment, increases from the core to the global city center (Figure 2). Hence, gradually differentiating from the core city center, the public open space of the global city center is primarily composed of the cemetery yards, larger and greener parks together with orchards along the riversides, again riverside pedestrian trails with tea gardens, and roadside pedestrian pavements (Figure 2). Such flourishing green spaces among the concrete spaces indicates a sort of ecological conversion within the global city center (Figure 2). In this respect, ingredients of urban ecology differ from the components of the relatively natural and rural area ecology (Forman, 2016). Consequently, the alternative public open spaces that can potentially be supplied by the global city center are also larger than the core city center (Table 1). The introduction of these alternative public open spaces principally involve the activation of other riverside and roadside landscapes by planning and application of recreational facilities along these spaces. The natural and rural areas surrounding the cities are permanently under the threat of urbanization and urban expansion (Antrop, 2004), unless contrary landscape and urban planning strategies are implemented in order to promote sustainable urbanization (Wu, 2014). On the other hand, considering the expansion and sprawl potential of the Bartın city towards the surrounding natural areas, urban forests that would provide recreation opportunities for the public should be sought among the woodlands at the actual urban periphery. Indeed, Öztürk and Bolat (2012) suggested the recreation potential of six forest patches within the urban periphery outside the actual global center of the Bartın city, and they discussed their suitability for the urban forestry.

The population characteristics of the core and global nearby villages together with their mean distances to the center point of Bartın city, are presented in Table 2. Almost 5% of the total rural population of the villages connected to the Bartın city, lives within the immediate nearby (≤ 5 km) of the city center (Table 2). This immediate nearby rural population also corresponds to almost 5% of the total local population (71,703) of the central city (TSI, 2019b). Nevertheless, the rural population within the core nearby villages (≤ 10 km) is slightly more than one-fourth of the each total local and total rural populations (Table 2). For most of the societies, economy is the primary motive urging the rural population to the city centers (Kroll et al., 2012; Wu et al., 2014), which is accordingly followed by education and healthcare. The rural population of the nearby villages, visits the city center for similar particular purposes involving principally the commerce and trade, business and labor, education and training, medical treatment and healthcare, governmental and municipal issues, simply visiting and meeting, transportation and recreation. Amongst the commercial and trading factors, major bazaar within the core city center plays significant and crucial role on gathering and concentrating not only the rural population but also the local population during the bazaar days in particular (Koday & Çelikoğlu, 2011). Especially during these bazaar days, exceedance of the carrying capacity of the public open spaces within the core city center, necessitates the urban landscape planning in order to reorganize actual public open spaces and even to explore alternative ones.

Table 2. Population patterns of core and global nearby villages connected to central city of Bartın Province.

	Core Nearby Villages		Global Nearby Villages		
	≤5km	≤10km	≤15km	≤20km	>20km
Number of Villages	5	25	54	76	61
Mean Distance (km)	4.1	7.0	10	12.1	30.8
Rural Population	3,487	16,027	34,989	47,058	26,993

The huge rural population of the global nearby villages (Table 2), always puts spatial and social pressure primarily on the core city center and secondarily on the global city center. In other words, there is a potential for the rural population of global nearby villages which in fact exceeds the population of the central city, to flow suddenly towards the city center. Therefore, this sudden agglomeration particularly around the core city center, which is under these circumstances far away from accommodating adequate public open space even for the local population, will not be scattered leading to the high population densities at certain concentration points. Merely 4 hectares of public open space could provide relatively qualified service only to 1000-2000 persons, which is complying with the variable open space planning standards given in the study by Veal (2013). However, the recent advances in the road conditions and means of transportation, supply the associated accessibility to the Bartın city center even from the furthest village at 43.2 km distance. Thereby the possibility of sudden population flow towards the city, can to some extent be solved within the global city center, which will serve public open space around 17,500-35,000 persons (see Table 1). On the other hand, the potential traffic problem as a result of such possible population flow should not be ignored, since that pressure will lead to parking lot problem as indicated for Safranbolu, Turkey (Dönmez et al., 2016). Consequently, sustainable landscape planning objectives should particularly be concentrated on the global city center, regarding the efficient land use planning for the actual and alternative public open spaces there.

4. Conclusions and Recommendations

Mostly the accumulation of the governmental, educational, healthcare institutions and the places of active business around the core and global centers of Bartın city have led to the aggregation of the local and rural populations within the core city center of Bartın. Therefore, the urban landscape and urban land use planning strategies should principally involve profound changes and decisions during the making of the city master and development plans. Moreover, sustainability of the recent public open spaces, discovery and development of the alternative ones are crucial for the urban landscape planning objectives. On the other hand, livable environment and social wellbeing within the city and the vicinity, can be supported through the introduction of the new public open spaces around the urban periphery and even at the countryside to serve for both the local and rural populations. However, this can be ensured by constructing the urbanization strategies and policies based on the landscape and regional scale plans.

Furthermore, sustainable landscape planning considering social basis of the region, intends to prevent cultural conflicts and unharmonious confrontations between the urban and rural populations in order to sustain public security within the city center. Otherwise, dependent upon these conflicts and confrontations, specific and customary crimes would be committed (Öztürk, 2019). Therefore, appropriate landscape planning and design projects that propose special arrangements and features, should be established within the context of the cultural conciliation between the urban and rural societies. In other respects, some precedent behaviors and properties of the urban society, which have not been adopted by the rural communities, cause incompatibilities for the usage of the open spaces within the city center (i.e. usage of the open spaces around the villagers' bus stops for chatting and eating place by the urban dwellers). Besides, there are application differences between the urban and rural societies for such practices like locational recognition and waste disposal within the city, which should not be ignored during the design and placement of the equipment like city guide boards, waste and garbage bins. There are also access differences between the urban and rural societies for such fields like car parking and riversides, where should be designed and rearranged multifunctional for sake of compatibility with the authentic, natural and historical environment. Beyond all these incompatibilities for the urban public open space usages, the cultural means and varieties and the economic returns contributed to the city by the rural population, should seriously be taken into consideration (Öztürk, 2019).

General observations indicate that the population movement between the Bartın city center and the nearby villages tends to stay within its' regular and controllable routines (Öztürk, 2018a). On the other hand, converter factors that are applicable for all the rural conversions, pose sudden population migration risks between the city and the nearby villages such as the establishment of the university, the construction of new settlements and the associated introduction of new recreational areas within either of the urban or rural landscapes (Öztürk,

2018b). Hence, solution-oriented multiple landscape and land use planning strategies must be developed against multiple models of sprawl scenarios, in order to absorb the possible negative impacts of these converters along the urban and rural gradients. This strategy development will also to some degree assist to moderate the prospective urban sprawl, unregulated rentier areas and uncontrolled social relationships (Öztürk, 2018a).

References

1. **Antrop M. (2004).** Landscape change and the urbanization process in Europe. *Landscape and Urban Planning*. 67: 9-26.
2. **Atalay İ. (2011).** *Climate Atlas of Turkey*. İnkılâp Bookstore Publications. 136 pages. İstanbul, Turkey.
3. **Bollukcu P. & Cengiz Gökçe G. (2019).** Revision suggestions for landscape design of Bartın City Square. *Journal of Bartın Faculty of Forestry*. 21(1): 97-107.
4. **Cengiz B. (2012).** Streetscape design proposals for urban ecological greenway planning in Bartın, Turkey. *Journal of Bartın Faculty of Forestry*. 14(Special Issue): 120-135.
5. **Dönmez Y., Çabuk S., Öztürk M. & Gökyer E. (2016).** Parking lot problem within Safranbolu urban protected site and solution alternatives. *Journal of Bartın Faculty of Forestry*. 18(2): 137-145.
6. **ESRI (2016).** ArcGIS Desktop 10.5. USA.
7. **Forman R.T.T. (1995).** *Land Mosaics: The Ecology of Landscapes and Regions*. First Edition. Cambridge University Press, Cambridge, U.K.
8. **Forman R.T.T. (2016).** Urban ecology principles: are urban ecology and natural area ecology really different? *Landscape Ecology*. 31:1653-1662.
9. **Gökyer E., Öztürk M., Dönmez Y. & Çabuk S. (2015).** Evaluation of ecotourism activities using Geographic Information Systems in mountain areas of Bartın City. *İnönü University Journal of Art and Design*. 5(12):25-35.
10. **Koday S. & Çelikoğlu Ş. (2011).** An example of traditional shopping site: Bartın Ladies' Bazaar (Galla Bazaar). *Atatürk University Journal of Graduate School of Social Sciences*. 15(2): 243-262.
11. **Konijnendijk C.C. (2008).** *The Forest and The City; The Cultural Landscape of Urban Woodland*. Second Edition. Springer International Publishing, Switzerland.
12. **Kroll F., Müller F., Haase D. & Fohrer N. (2012).** Rural-urban gradient analysis of ecosystem services supply and demand dynamics. *Land Use Policy*. 29: 521-535.
13. **Marsh W.M. (2010).** *Landscape Planning, Environmental Applications*. Fifth Edition. John Wiley and Sons, Inc. USA. (2010).
14. **Öztürk M. & Bolat İ. (2012).** *Determination of recreational urban forest patches based on spatial characteristics, Case Study: Bartın (Turkey) city center and vicinity*. In: BENA (Balkan Environmental Association)-2012, Sustainable Landscape Planning and Safe Environment, İstanbul Technical University, İstanbul, 21-24 June 2012.
15. **Öztürk M. & Gökyer E. (2015).** Seasonal variation in light transmission and canopy gaps of deciduous roadside vegetation: Assessment within forest landscape. *Eurasian Journal of Forest Science*. 3(2): 1-11.
16. **Öztürk M., Bolat İ., Gökyer E. & Kara Ö. (2017).** Land use suitability classification for the actual agricultural areas within the Bartın Stream Watershed of Turkey. *Periodicals of Engineering and Natural Sciences*. 5(1): 30-36.
17. **Öztürk A. (2018a).** *Immigration and Crises*. In: Immigration Sociology (Ed. Rıdvan Şimşek). Akademisyen Bookstore, Ankara, Turkey.
18. **Öztürk A. (2018b).** *Grand Crises of Social Science in Turkey (Alarm for Preference of University Department over YKS Examination: Analysis of 2018 Data)*. 3th International Multidisciplinary Studies Congress, October 5-6, 2018. pp. 360-365. Kiev, Ukraine.
19. **Öztürk A. (2019).** The comparison of East-Islamic Cities and Western Cities in the context of city Imajoloji. *TYB Academy (Journal of Philology, Literature and Social Sciences)*. 26: 112-129.
20. **Randolph J. (2004).** *Environmental Land Use Planning and Management*. First Edition. Island Press, Washington, USA.
21. **Sakieh Y., Salmanmahiny A., Jafarnezhad J., Mehri A., Kamyab H. & Galdavi S. (2015).** Evaluating the strategy of decentralized urban land-use planning in a developing region. *Land Use Policy*. 48: 534-551.
22. **Steiner F. (1999).** *The Living Landscape: An Ecological Approach to Landscape Planning*. Second Edition. McGraw-Hill Professional Architecture. New York, USA.
23. **PDEU-Provincial Directorate of Environment and Urbanism (Bartın Governorship) (2018).** *Environmental Status of Bartın Province in 2017*. 131 pages. Bartın, Turkey.

24. **TSI-Turkish Statistical Institute (2019a)**. *Turkey in Statistics 2018*. 147 pages. Publication Number: 4546, Ankara, Turkey.
25. **TSI-Turkish Statistical Institute (2019b)**. *Address Based Population Registration System, Statistics of 2018*. <https://biruni.tuik.gov.tr/medas/> Date of Access: 29.06.2019.
26. **TSMS-Turkish State Meteorological Service (2013)**. *Daily Meteorological Data of Bartın Meteorological Station*. Ankara, Turkey.
27. **Turner M.G. & Gardner R.H. (2015)**. *Landscape Ecology in Theory and Practice: Pattern and Process*. Second Edition. Springer-Verlag, New York, USA.
28. **Veal A.J. (2013)**. Open space planning standards in Australia: in search of origins. *Australian Planner*. 50(3): 224-232.
29. **Wu J. (2014)**. Urban ecology and sustainability: The state-of-the-science and future directions. *Landscape and Urban Planning*. 125: 209-221.
30. **Wu J., Xiang W-N. & Zhao J. (2014)**. Urban ecology in China: Historical developments and future directions. *Landscape and Urban Planning*. 125: 222-233.