Research Paper

Agents and contexts in exclusiveness of public shoreline
Middle shoreline of Caspian Sea North of Iran

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Abstract

Because of the suitability of coastal lands for different groups of activities such as recreational, residential and commercial functions, there is an increasing demand among different stakeholders to benefit from these natural lands. The conflicts between the users, sometimes, lead to exclusiveness and limitation of public access to the shoreline. This article aims to recognize the main agents and mechanisms intensifying the spatial segregation and limitation of public access to the coast. By applying the qualitative methods of Interview and documentary analysis in the middle shoreline of Caspian Sea, the categorization of exclusive public shoreline, their supportive contexts and spatial outputs, are formulated. Findings show that in contrast to the privatization of publish shoreline throughout the world, in Iran, beside the role of private sector, it is the government who benefit from the shoreline exclusively. In order to find the role of institutional contexts, analyses of the formal and regulatory documents, laws and regulations, showed the negligence in performance of coastal and agricultural land use control systems which accelerate the processes of land use change and creation of exclusive spaces in the form of gated communities. In the last step, the analysis of interviews with key actors showed the unsuitable spatial consequences especially social segregation and also decline in economics of coastal cities.

Keywords: Exclusive space, Privatization of public space, Gated communities, Coastal area.

1. INTRODUCTION

Coastal Urban development has special importance because of the individual characteristics of integration of three natural elements including air, water and land. Spatial planning in the coastal region is particularly challenging due to the problems of sea level rise, land-use pressures and the fragile nature of the coastal ecosystem. Coastal regions in Iran encompass more than 10 million people who wish to benefit from the potentials of coastal activities. The most common form of activity in this region is recreational one, with the representation of coastal villas, residential units and gated communities to meet the needs of visitors’ temporary residence. These coastal buildings cause limitation in public access to the coastal lands, which count for the national resources. According to the Iranian constitution these lands are public goods which should be open to all groups of society.

However, many gated communities with the recreational

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and residential functions cause exclusive access and activity for specific groups of the society. Mazandaran Province in the north of Iran has a shoreline with 337 km. 73 % of this shoreline (248 km) is under physical development and just 27 % (about 90 km) is open to public. These exclusive spaces cause many undesirable effects on natural resources and human capital of this strategic region. With the high vulnerability of coastal urban areas, recognition of the main agents and contexts that support the creation of such an exclusive space is necessary.

1.1. Questions and Goals

- Who are the main agents intensifying the exclusiveness of public coastal lands?
- What are the institutional contexts, supporting the creation of exclusive gated communities in the coastal region of the case study?
- What are the spatial consequences of exclusiveness of coastal lands in this areas?
So, this research aims to recognize the main factors and forces which cause the monopoly relations in public coastal lands and to analyze the spatial outcomes and effects of these problematic processes.

1.2. Methodology

To find the main agents, observations and interviews with key participants who have local knowledge about the ownership, use, users and function of coastal buildings are analyzed. The documentary research is also applied to analyze the formal reports on coastal gated communities and for the next step, to analyze the regulations and laws relating to coastal exclusiveness. To investigate the spatial outputs of exclusive space production in coastal area, the interviews were conducted with participants, focusing on socio-economic trends and transitions regarding land price, commercial and touristic behaviors and tendency to live inside the gates.

2. LITERATURE REVIEW

2.1. Gated Communities and Privatization of Public Spaces

<table>
<thead>
<tr>
<th>Table 1 Categorization of gated communities</th>
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<tbody>
<tr>
<td><strong>symbolic</strong></td>
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<tr>
<td><strong>The function of gating</strong></td>
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<td><strong>Security elements</strong></td>
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<td><strong>Services and amenities</strong></td>
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<td><strong>residences</strong></td>
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<td><strong>Occupation</strong></td>
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<td><strong>location</strong></td>
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<td><strong>size</strong></td>
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</table>

Harvey states that cities and neighborhoods are shaped by the private and semi-private sectors following the interests of developers [7]. In this sense, Adam Keul believes that the privatization of public space is the representation of urban policies in neoliberal economic which facilitate the process of capital accumulation [8]. He states that this process could not be favored in all public spaces as these spaces are different inherently. Development of gated communities refers to the development of 1970s in United States with the goal of recreational and tourist sector improvement [9]. Today there are many gated communities developing throughout...
the world which are in the core of spatial researches, for example gated communities in Britain [10], Canada [11] England [12], South Africa [6] Qatar[13], and Malaysia [14]. In all these works, the term gated community (or in some studies Guard-Gated community, Barrios Cerrados, private urbanization) refers to the residential area which has limited and exclusive access. In many researches gated community is called Fortress city [15,16] as today cities are shaped as the luxury defenses in which the security systems, control the human behavior [17]. The work of Blakely and Synder [18] is the basic study on gated community in which this phenomenon is defined as the residential area with limited access and the privatized public space inside the gates. These two points were mentioned in many further studies. The categorization of gated communities was the subject of some researches specially the works of Blakely and Synder [18] with three categories of life style, prestige and security gated communities, project of Luymes [19] who categorized the gated communities on the basis of two points including the difficulty of access and the severity of security control systems, and the study of Burke [20] who emphasized on the physical and social characteristics of different kinds of gated communities. In this sense, Grant and Mitedest [11] developed the categorization of Blakely and Synder by emphasizing on the function, security system, services and amenities, occupation, location, size and policy making of the gated communities. (Table 1).

2.2. Pressures on Coastal Lands and Privatization of Public Shoreline

Coastal areas are highly populated because people place considerable value on the coast for many reasons, namely aesthetic, naturalistic and utilitarian [21]. Because of the constraints in the ecological capacity of coastal lands on one hand and the increasing conflicts between different actors derived from the increasing and rapidly growing population of coastal regions on the other hand, there are high pressures to occupy coastal resources [25,21,24,23,22]. In the United States nearly half of the population live in coastal counties, with over 110 million people living in a coastal region that comprises only 11% of the total land area of the country [26]. In the European Union approximately 196 million people live in coastal regions [27] and in Canada, over 11.5 million people, which represents about 38% of the Canadian population, lives within 20 km of a coast, in a populated area that comprises only 2.6% the land area of Canada [21]. In Iran there are about 10 million people living in the coastal provinces which are the most populated regions in the country. In North of Iran, along the Caspian Sea, this population is crowding into a thin corridor shaping a dense region [28]. This implies an enormous need for providing more public access for increasing number of coastal residents. It is also important to provide public access to sustain the coastal tourism economy, one of the fastest growing economic sectors in these areas [29]. The coast of Connecticut in United States provides a wealth of natural, recreational and commercial resources. However, the demands of growing populations and increasing development threaten the long-term survival of these resources. While 80% of the shoreline is privately owned, only 14% of the Connecticut shoreline is sandy beach. Of the current coastal public access sites, 16% are privately owned. Growing coastal populations lead to increasing demand for housing and other community. The common law doctrine of Public Trust says that most coastal states, including Connecticut, hold the submerged lands and water below the mean high water line in trust for the public and future generations. In Connecticut, lands above the mean high water line can be privately owned, but the so-called “wet beach” is considered as the public trust land, and therefore is open for public access.

Low [30] believe that the creation of gated communities specially those which contain public goods such as coastal landscape, are the examples of creation of exclusive spaces as these public goods should be accessible for all groups of society. While there are pressures on use of these lands, decision making systems apply different kinds of tools to control these challenge [26,32,31]. In Norway the phenomenon of coastal second houses caused the privatization of public spaces and according to the regulative frameworks none of these owners have right to segregate their property by fences, gates and walls. In spite of private ownership, the pedestrian way for public use should be accessible [33].

Integrated coastal zone management plans are the main plans to support public benefits among different actors in governmental, public and private parts. To achieve this goal, strategic tools and regulations are applied in decision taking systems [27]. The 1972 Coastal Zone Management Act (CZMA) is the federal regulation that seeks to protect the coastline. One of the objectives of the Coastal Zone Management Act is to ensure continued recreational use and enjoyment of coastal resources [34]. In the integrated coastal management plan of southern Africa, the use of the term “coastal public property” is a result of the people-centered approach to coastal management. This is a shift away from resource-centered management and places the ownership of large areas of the coastal zone; specifically, what is known as coastal public property, in the hands of the citizens of South Africa. The intention of coastal public property is to prevent exclusive use of the coast by facilitating access to, and sustainable use of the productive coastal resources for the benefit of all South Africans. It is the mission of the State as trustee to ensure that coastal public property is used, managed, protected, conserved and enhanced along the interests of the whole community. Coastal public property may be extended by the Minister. Privately owned land can be acquired by the State, through the Minister, acting with the concurrence of the Minister of Land Affairs, either by purchase agreement, exchanging it for other land, or by expropriation, if no agreement can be reached with the owner [35]. Most New Zealanders have a high expectation that the public will have free and unrestricted access to and along the 15,000 km-long coastlines of New Zealand. The maintenance and enhancement of public access to and along the coast is recognized as a matter of national importance in the
Resource Management Act 1991 and by the New Zealand Coastal Policy Statement, 1994. The importance of continued public access to the coast is recognized in legislation and in the New Zealand Coastal Policy Statement. It is a matter of national importance for local and territorial authorities implementing the Act [36]. In Nova Scotia of Canada, much of the coastline, despite being largely privately owned, is still relatively undeveloped and available for public use. For this reason, the Government of Nova Scotia has an opportunity to work towards lessening conflicts over coastal areas and protecting and preserving current public coastal access opportunities for the future [37].

In Massachusetts there are Lawyers and agents helping people and organizations to know more about and achieve the right to access the coast [38]. So, coastal lands in most of the countries cope with challenges of privatization of public coastal spaces. There are regulatory tools and strategic policies that are applied to improve public use of the governmental and public coastal lands.

3. DISCUSSION

Mazandaran Province has the area about 24000 km² and 3 million population. Because of its geographical location and climate situation, there are more than 12 million tourists visiting the shoreline annually. However, there are limited open spaces along the shoreline because of the increasing trend of privatization of public coastal spaces in the form of gated communities. The case study in this research is the coastal urban area in the middle part of Mazandaran Province which includes two main coastal cities of Babolsar and Fereydun-Kenar and their surrounding areas encompassing agricultural lands, rural areas and regional recreational complexes.

3.1. Agents; Who Benefit from the Coastal Landscape

Different kinds of buildings in the coastal lands are the representations of different kinds of human activities and land ownerships. As there is not the cadaster system in Iranian Land management, there are many uncertainties regarding land ownership as the basic criteria to find public or private benefits of the space. In this sense, authors conducted deep interviews with key and knowledgeable actors, to find the main owners and users of the coastal lands and buildings. Also, documentary research was applied to use outside sources and documents, to support the specific viewpoint about the exclusiveness of coastal lands. The process of documentary research contains the conceptualizing and assessing documents, relating to coastal gated communities including governmental reports, speeches and census. Findings of the research in this section show that there are three agents in triple sectors of public, private and government, who attempt to meet their own needs and interests. The recreational activities which are prepared for governmental employees have occupied 95 km of coastal corridors [39]. These areas include recreational services and are usually active in 6 months of a year (spring and summer). In other days, their conference and seminar salons are applicable. These areas have designed land escapes and proper services. The low density of buildings is the main physical characteristics of these governmental recreational areas. What is important in these governmental cases is that the coastal public benefits and use of interior recreational spaces are limited for public (residents and tourists) and are exclusively used by the governmental staffs. With the priority of governmental employees, in some seasons, these areas are assigned to the governmental organization of cultural heritage, tourism and crafts in order to be accessible for public [40]. In Mazandaran Province there are 73 governmental recreational and training systems which are active just in Nowruz holidays and in summer [39]. This governmental privatization of public shoreline leads to decline in economic power of private hotels, villas and touristic residential areas and also imposes unnecessary costs for maintenance and services to the governmental financial resources. In 2012, about 5.6 million dollars, which is the average of about 1800 governmental staff's annual salary, was the maintenance cost of the recreational areas with the occupancy ratio of 20% in a year. The second categories of governmental buildings are the non-recreational gated communities in the form of either governmental housing projects for
residence of governmental staffs or educational gated communities of governmental universities. These both have constraints of coastal public access and benefit. Another category of coastal land ownership and activity is the private sector recreational and residential gated communities. About 35% of coastal lands which shape about 120km of the shoreline is dedicated to the private residential and recreational buildings. Observations show that the gated communities which are built before 1970s, have the appropriate spatial order with low density and are compatible with environmental considerations. Unlike these exclusive spaces, the new built gated communities are shaped with less respect to coastal environmental obstacles and are built on the basis of invaluable agricultural land subdivision. The shoreline access in these recreational and residential gated communities is limited and it seems to be open just for elites of the society.

<table>
<thead>
<tr>
<th>Exclusive coastal spaces</th>
<th>Length (km)</th>
<th>The activities in coastal lands</th>
<th>Physical characteristics</th>
<th>Categories of public benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Governmental recreational gated communities</td>
<td></td>
<td>Hotels, educational and recreational centers, conference salons</td>
<td>With low density, landscaping and high quality services</td>
<td>Limitation in public “benefit” and public” access”</td>
</tr>
<tr>
<td>Governmental Residential gated communities</td>
<td>95km along the shoreline</td>
<td>Housing cooperation companies, Organizational housing</td>
<td>High density, low quality in buildings and services</td>
<td>Limitation in public “benefit” and public” access”</td>
</tr>
<tr>
<td>Governmental Universities</td>
<td></td>
<td>Departments and Universities…</td>
<td>Low density and landscaping in university campus and high density in dormitory buildings</td>
<td>Limitation in public “benefit” and public” access”</td>
</tr>
<tr>
<td>Others: ports, governmental brownfields…</td>
<td></td>
<td>National police</td>
<td>Infrastructures related to the specific activities</td>
<td>Limitation in public “benefit” and public” access”</td>
</tr>
<tr>
<td>Private Recreational and residential gated communities</td>
<td>120 km along the shoreline</td>
<td>Private villas, daily retail centers, recreational spaces</td>
<td>Low density in older buildings and high density in contemporary buildings, landscaping</td>
<td>Limitation in public “benefit” and public ” access”</td>
</tr>
<tr>
<td>Private hotels and villas</td>
<td>Temporary housing</td>
<td></td>
<td>high density</td>
<td>open to public</td>
</tr>
</tbody>
</table>

Though, coastal private buildings lead to the exclusiveness of public shoreline as well as governmental gated communities. The difference is in the beneficiaries. In the case of governmental exclusiveness, the beneficiaries are governmental staffs with the political power and in the case of private exclusiveness they are rich people and elites, who have the economic power in the society and are able to use the shoreline exclusively.

3.2. How the Regulative Contexts Play the Role in Exclusiveness of Public Coastal Areas?

The building processes in the coastal lands involve some key concepts such as environmental protection and social equity in the access to the shoreline and also economic development of coastal region. Because of vulnerability and spatial importance of the coastal areas, it is important to understand how institutional frameworks control building mechanisms in the coastal lands. On the basis of the categories of buildings along the shoreline, the supportive institutional contexts are analyzed (Table 3).

On the other hand, analysis of interviews with participants (10 farmers and 4 members of rural council) and also 5 local key informants in the office of road and urban development, show that the national economic problem of the country, which has roots in the rentier structure of the government, cause the decline in productive sectors such as industry and agriculture. This, encourage farmers to sell their agricultural lands and start their business in real-estate markets. In 2015, the area of
agricultural and gardening lands in Mazandaran province was 470,000 hectares. Since 1990 (in about 20 years), about 6500 hectare of agricultural lands have changed to other land uses and have been excluded from agricultural production cycles. For farmers, the lower income derived from agricultural activity in comparison to the value added of land use change, support their rational decision. Though in the situation that there is an increasing trend to sell the natural lands to non-local residents in pre-urban areas, the legal system of decision making would gain significant role for controlling land use changes. Findings show that these trends are because of the negligence in formal processes of land use change because of the informal lobbying network of rural councils. As the divided agricultural lands (in the process of inheritance) which are out of urban and rural territories, have no “formal property-ownership registered document”, so considering these lands inside the rural territories could provide the opportunity for their formal registration in the formal ownership systems. However, the lower cost of getting rural building certification, the shorter time of administrative processes and the lower price of energy channels for rural buildings, are the main motivations for land owners to leave farming and trying to change the current natural land uses. Though, because of the lower cost of having rent (the opportunity of lobbying and bargaining) in the local system (Rural territory), the volume of breach of the law is increasing.

<table>
<thead>
<tr>
<th>subjects</th>
<th>Regulative contexts</th>
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<tr>
<td>Public coastal access</td>
<td>According to the constitution of Iran, coastal lands are under the governmental ownerships to be accessible for public instead of certain groups of society [41]. In the implementation bylaw of fourth development plan of the country, approved in 2004, the public use of coastal lands gained attention. It is emphasized that all governmental buildings and lands in the limitation of sea buffer, 60 meters from the Caspian Sea should be open for the public uses. In 2010 in order to encourage the public benefits of coastal services in the governmental recreational complexes, the regulation for public use of residential spaces (located out of the limit of 60 meters from the Caspian Sea), was approved. In this regulation, with the collaboration of ministry of economic and property of Iran and organization of cultural heritage and tourism, in some seasons of a year, the governmental hotels are assigned to this organization with the defined ratio of costs, in order to be dedicated to public uses [40]. After 4 years not only the coastal lands which are under exclusiveness of governmental systems are open to public, but also the trends of buildings in the coastal lands are increasing rapidly. The implementation processes of the regulations for controlling urban sprawl are insufficient. Although there is the act of “preventing sailing and registration of the non-residential land uses in peri-urban areas to housing companies and private sectors” (2002), the private sectors who are applicants of residential buildings, attempt to change these rural territories to the urban ones, by imputing political forces to the decision taking systems. So in the lack of regulatory positions in the institutional frameworks and the informal bargaining manners, there is a scape way for the private sector to achieve its economic growth instead of public values. The consequence of this process is the buildings of recreational and residential towns by subdivision of invaluable agricultural lands [42].</td>
</tr>
<tr>
<td>Building gated communities in peri-urban areas</td>
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3.3. Exclusiveness of Coastal Lands: Spatial Consequences

3.3.1. Social Consequences of Coastal Land Exclusiveness

To analyze the social impacts of exclusiveness of coastal lands, semi-structured interviews with 30 residents in Babolsar (who came to the privatized public spaces near the gated communities) and 20 residents of peri-urban recreational-residential gated communities of Darya-kenar and Khazar-shahr, have been conducted. Residents of Babolsar were asked about their preference of living in the coastal cities with their regular and traditional neighborhoods or living in gated communities in the suburban areas. The second point was their preference of shopping centers, either city centers or commercial centers in suburban areas. The last point was their preference in visiting coastal recreational spaces either public shoreline inside the cities or the private shoreline of the gated communities. Analysis of the interviews showed that 26% prefer to live in the gated communities of peri-urban area of Babolsar. The main reason is that most residents prefer to live near to their family and friends and benefit from the dynamic and vivacity of city center and traditional neighborhoods. However, the reason for preferring gated communities is that in this residential area, they feel free and safe in their daily life and behaviors. The findings of second question showed that 40% questioners go to the commercial complexes near the gated communities of khazar-shahr and Darya-kenar, and 60% prefer the inner city markets. For the third question about 83% of questioners use the coastal recreational land uses in the peri-urban areas near these gated communities because of its luxury and high quality of services for tourists than the coastal services of inner city. So the findings of the first part in analysis of social outputs of public shoreline exclusiveness showed the dominance and attractiveness of peri-urban areas in the recreational and commercial activities than inner city because of their high quality of space and services. However, for the permanent residence, local people prefer to live inside the traditional residential
Areas. The interviews with residents in khazar-shahr and Darya-kenar gated communities were conducted in two category of personal and social questions. Local and non-local identity of residents, academic degree and the relationship with coastal cities and periphery rural residents were the main subjects of debates. 72.7% residents in gated community of Darya-kenar town and 54.5% of residents in khazar-shahr town are not local and are from Tehran, Capital city of Iran, who prefer to live in the peaceful coastal space of gated communities. All questioners in both gated communities were in the high levels of educational situation, however they have collaborative relationship neither with residents of coastal cities nor residents of rural areas. The relations are just limited to the job opportunities such as Husbandry, housekeeping and sentry for rural people. So the concentration of rich people beside the rural settlements with two different class and with no active support and relationship caused the social segregation in the region.

3.3.2. Economic Impacts of Coastal Land Exclusiveness

Following the creation of gated communities in peri-urban areas, the land price has been raised rapidly. This caused the increasing pressure on agricultural lands particularly those which were near to the gated communities, in order to gain subdivisions of 200 m² to 500m² to build the private villas and then to create the gated communities. So there is an increasing trend for farmers to sail their rural lands to achieve more advantages in real-estate market instead of agricultural activity. Consequently, the ratio of agricultural products which is the main part of regional economic decreased. With the lack of agricultural lands, the rural populations prefer to leave rural settlements and live in the cities in order to find the job usually in the service sector. The census statistics showed that during 5 years (2006 to 2011), growth ratio of agriculture practitioners was -0.07 and the growth ratio of rural population was -0.04 [43]. The exclusiveness of public coastal lands in the form of gated communities changed the balance between land price in coastal cities and periphery urban area of Babolsar-Fereydoonkenar region. In 2014, although the land price in the city center of Babolsar did not change, the land price in the peri-urban area and near the gated communities raised from 50 S/ m², to 167 S/m². The growth ratio of 2.9% of land value in the peri-urban area caused the concentration of enterprise in land and building of peri-urban area and so the demolishing of agricultural lands.

4. CONCLUSION

Because of the high environmental quality, potentials for tourist industry and beautiful landscapes for residential purposes, the middle shoreline of Caspian Sea in North of Iran, is under increasing pressure to establish different physical spaces to encompass different human activities. While there are conflicts to use and benefit from coastal lands, the social goal of public access and public benefits of shoreline got the invaluable roll. In this research authors attempted to analyze the categories of exclusive buildings along the shoreline with respect to three criteria of ownership, users and functions. The findings showed the important role of government and private sector in exclusiveness of coastal lands. The private gated communities are the main kind of buildings in the coastal lands which cause the exclusive use of public shoreline by the rich people who have economic power, as well as the governmental complexes in the form of recreational and residential gated communities which are open just for the governmental staffs with their political power. Though it is clear that in spite of privatization in other communities, in which government uses the control and guidance tools to balance the public and private interests, in this case, governmental organizations act as a key agents of exclusiveness of public shoreline.

Analysis of regulatory frameworks showed the inefficiency of regulations which control the buildings in coastal lands. These regulations not only support the private use of coastal lands, but also improve the governmental buildings. Although there is a specific regulation to control the public essence of lands inside the limit of 60 meters, there is not any supportive forces and mechanism to develop the implementation process. Even in the regulations regarding land use change, there are some negligence which facilitate the process of changing agricultural lands to residential ones. Analysis of the outputs of public shoreline exclusiveness focused on the consequences of land use change and its impacts on economic and social and structures of the region. The increasing trends of land market interests in rural settlements caused the demolishing of agricultural products and decline in this part of regional economic. Creation of commercial and luxury services around the gated communities in peri-urban areas caused the decline in the market of inner city to attract enterprises and tourists. The concentration of rich people in the rural context of suburban, and the limited relations of the residents in gated communities with citizens of coastal cities and rural people, showed the social segregation in these areas.

Altogether, in this case there is a point that mechanisms of spatial planning system in coastal urban areas should change to cope with these challenges. It seems that spatial planning approach in coastal urban areas has special role to organize the space with respect to the conflicts of interests. This can be the extended scope of this article in further studies.

CONFLICT OF INTEREST

The author declares that there are no conflicts of interest regarding the publication of this manuscript.

REFERENCES


[2] Nemeth J, Schmidt S. The privatization of publicness:


[29] Low S. The erosion of public space and the public realm: paranoia, surveillance and privatization in New York City, City and Society, 2006, Vol. 8, Issue 1, pp. 43–49


[33] Vickey N. Understanding and providing public access to connecticut’s coast, Yale University school of Forestry and environmental studies, 2005.


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