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Review Article

A Brief Review of the Current State of Sustainability of the Coastal Cities of the State of Veracruz, Mexico

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Summary

This work aims to visualize the current state of sustainable development in coastal cities in the state of Veracruz, Mexico. Likewise, a perspective is provided based on a brief analysis considering the main factors that influence the balance of sustainability and their interrelationships (socio-economic and socio-environmental factors), among which the protagonist is the human being. It is urgent to change the old model where the problems of cities are viewed in isolation. This situation is not unique to the coastal cities of Veracruz, Mexico, but is probably more or less common to many coastal cities in the Americas.

Introduction

Most coastal cities in the State of Veracruz present various complications and challenges to get a sustainable balance and well-being of their population [1]. This balance is manifested in socioeconomic and socioenvironmental factors that essentially involve the environment of the geographical space of these cities (Figure 1). Although this brief review considers the State of Veracruz, Mexico, it is estimated that this situation occurs to a greater or lesser extent in many of the coastal cities of America. It is essential to emphasize that, if the necessary changes are not made to take care of the environment of the geographical surroundings of coastal cities [2, 3], their survival is put at great risk. Caring for the environment involves protecting freshwater sources and their quality (aquifers, rivers, and lakes), land use and management, and air quality. It also involves public policies, economic and social programs, as well as the cultural aspects of all sectors of the population and authorities [4].

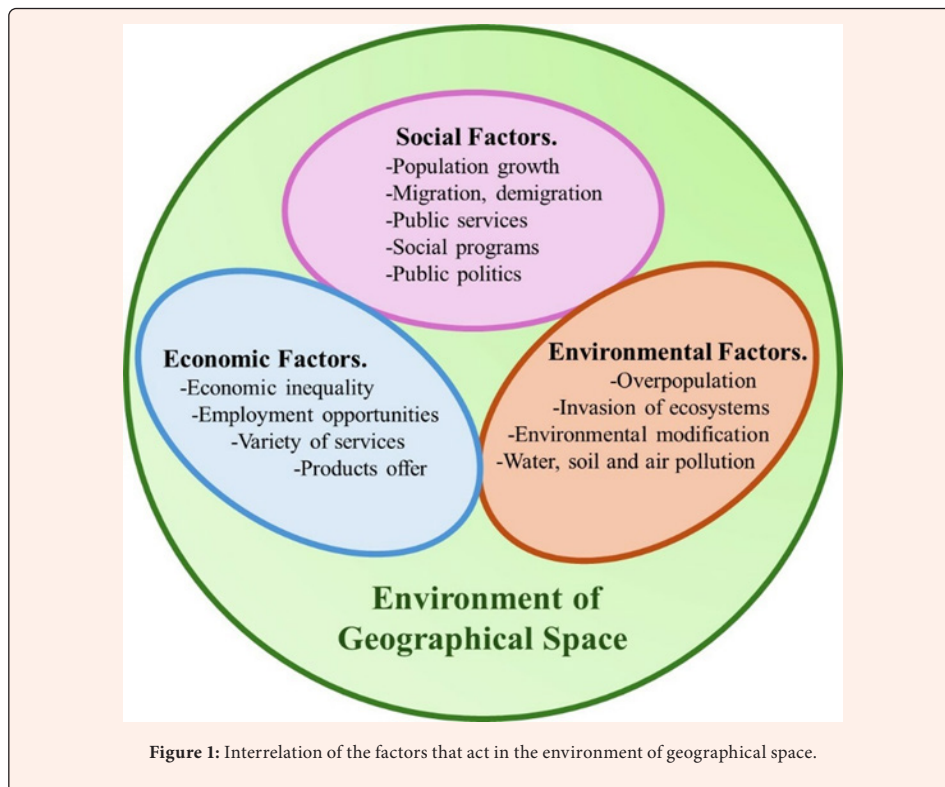


Figure 1: Interrelation of the factors that act in the environment of geographical space.



Socioeconomic Factors

An important factor that promotes the development of a city is the opportunity and variety of jobs that can offer, so that the population stays in it. This factor reduces the migration of its population [1, 4]. In the coastal cities of the Gulf of Mexico in the State of Veracruz, a great imbalance has been observed in terms of employment opportunities, where small cities do not offer this variety of opportunities [1, 5]. Another important factor is the limited supply of commercial products available in small towns, e.g. e., private health services, spare parts, and supermarkets. Likewise, the public services provided by the authorities (drinking water, paving, public lighting, and garbage collection) are limited in the quality of the service. This is due to low collection due to having a small population or due to the economic level of its population [1, 4, 5]. On the contrary, in the most populated cities, the number of inhabitants exceeds the capacity of the authorities to satisfy the basic needs of the population [2, 4]. This leads to a series of operational difficulties for the services. The concentration of labor supply leads to the overpopulation of these cities. It is important to consider to what extent industrial economic development is convenient regarding the effects on the environment and its consequences [4-6].

Socio-Environmental Factors

In recent decades, high population concentrations in large coastal cities in the Gulf of Mexico have impacted and altered the ecosystem that surrounds them [2]. Overpopulation causes various problems (e.g. modification of the environment, garbage management, drinking water supply, mobility, and economic inequality of citizens) and in many cases, academic studies are not considered to protect the environment and prevent its impact [3]. For the most part, garbage disposal sites are not adequate and do not have adequate preparation, and as a consequence these sites are contaminating the soil and aquifers, causing diseases to the population [1, 7, 8]. Likewise, the supply of drinking water (infrastructure for collection, transportation, and treatment) is of poor quality. The overexploitation of aquifers and the effects of climate change are causing a significant water crisis [7, 9], Yáñez-Arancibia et al., 2013).

An important point that is inserted in the socio-environmental factor is the cultural one. Culturally, citizens have not become aware of the future consequences of their interaction with the environment. It lacks a comprehensive vision of responsibility for the environmental damage that may be caused, for example, by thinking that someone else does it. Environmental responsibility should be part of the lifestyle and not something obligatory [2, 3, 7, 10]. As for the authorities, the situation is similar, remembering that the authorities are made up of citizens and the cultural factor is strong. Furthermore, the implementation of adequate systems and mechanisms to care for the environment represents an additional expense to the operating budget of the government administration, and in many cases, environmental protection programs are partially applied [2, 3, 6, 7].

Discussion

The imbalance and disengagement of different factors put the sustainability of the Coastal Cities of the State of Veracruz at risk. There are many environmental studies on the contamination of soils, aquifers, and river contamination, as well as the overexploitation and mismanagement of water resources, however, these studies are not integrated into a sustainable development and growth plan. For the cities. It is important to highlight that public policies aimed at caring for the environment and the economic development of the population are partially applied, so they are not 100% effective. Furthermore, they have been little issued for their knowledge and compliance. In the sociocultural aspect, the ideology of remediation has prevailed over the idea of prevention and avoiding problems. Most citizens are not involved in responsibility for the future consequences of their actions that put the sustainability of their city at risk.

On the other hand, the disconnection between economic development, population growth, and environmental protection has given a scenario where there are few densely populated cities and a high number of small cities with a lack of job opportunities, public services, and low-quality health, which increases inequality between cities. In recent decades, the authorities of large cities have had to face increasingly demanding challenges to solve and satisfy the needs of their population (jobs, poverty, public services, such as public lighting, garbage collection, mobility, drinking water, and security).

Conclusions

It is urgent to change the old model in which the problems of cities were viewed in isolation. It is essential to identify the origin, treat the problem, and evaluate the final result of the actions carried out, considering the set of factors that intervene in the balance of sustainability. It is necessary to promote a sociocultural change in citizens so that the culture of prevention and care becomes part of their daily lives. This must include all sectors of society (citizens, authorities, and businessmen). If we continue down the same path, the risk is high and the consequences are disastrous, putting human well-being at risk. It can be seen in this brief review of the current state of the Coastal Cities of the Gulf of Mexico that in the last 50 years, there has been no significant progress in the sustainable development of these cities, which is why it is necessary to accelerate the strategic changes on this topic. Considering the above, this scenario is not exclusive to the Coastal Cities of the State of Veracruz in Mexico but may be to a greater or lesser extent a common situation in many of the Coastal Cities throughout America.

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