

Urban Planning and Architecture Design for Sustainable Development, UPADSD 14- 16 October 2015

The New Town Development in Ecological Sensitive Area Based on Resilience Thinking

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Abstract

Resilience thinking is the basis to guide the ecological sensitive area sustainable development. Resilience thinking revolves around system changes and to ignore or resist change makes us more susceptible to damage. The research attempts to apply resilience thinking in new town development in ecological sensitive areas. In particular, the paper proposes to impose ecological capacity control and projection of construction scales in the planning stage, to build an operational index system between planning and implementation, to avail the feedback mechanism in decision-making, and to ensure accurate implementation of the plan.

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Peer-review under responsibility of IEREK, International experts for Research Enrichment and Knowledge Exchange

Keywords: Ecological sensitive area; Resilience Thinking; feedback mechanism; index system

1. Introduction

From the “Garden City Theory” of Howard to the proposal of the eco-city concept based on system theory in the 1980s, the theoretical explorations regarding city development and natural environment never stopped. Among the planning practices of eco-cities emerging in China in recent years, the construction of eco-city¹ with big event and political influence was the most prominent; it mainly explores the technical suitability and cost effectiveness of

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¹ Such as the Tianjin Sino-Singapore Eco-Town cooperated between the Chinese Government and Singapore Government, the Shanghai Dongtan Eco-Town cooperated between Chinese Government and the UK Government, as well as the Caofeidian Eco-city located in Tangshan, etc.

ecological construction under extreme conditions as well as the universality and effectiveness of the latest leading-edge ecological technologies². This has active significance to the explore selection of land for urban space development under the background of the current farmland protection policy in China³, but for most urban constructions, it is not necessarily has the generalization and universality, the reason is that its policy advantages on macro level are difficult to copy or simulate in most regions of China³. Therefore, it is urgent and necessary to explore the regular development model in Chinese ecological sensitive areas in order to solve the ecological problems faced by most cities.

2. Development of Ecological Sensitive Area

2.1. Concept of ecological sensitive area

Peng Zhenwei, et al. [1] believed that ecological sensitive areas not only include the ecological sensitive areas with large-scale ecological factors and ecological bodies that play a decisive role on the general ecological environment of area, such as mountain, reservoir, natural conservation area, but also include the urban and rural settlements surrounding ecological sensitive areas, it is a more complete spatial and social entity. You Jia [2] believed that ecological sensitive area is the collection of ecological sensitive area and surrounding areas. There currently are some misunderstandings about the protection and development of "Ecological Sensitive Area", a common notion is that the simple maintenance through inflexible space control and non-development is protection of "Ecological Sensitive Area". Actually it is caused from the confusion of the two concepts of "Ecological Sensitive Area" and "Ecological Sensitive District". Besides the protection of ecological sensitive district (natural ecological factors), ecological sensitive area also needs to implement strict development control on the urban and rural settlements, which are the main source of artificial disturbance in the area. It can be seen that the development of ecological sensitive area includes the double connotations of protection and development.

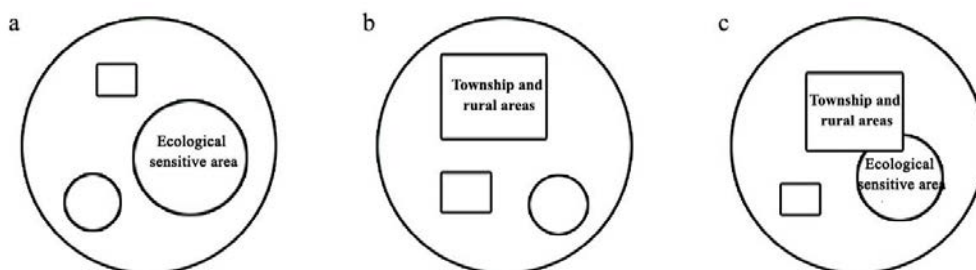


Fig. 1. (a) Model I: Stagnation of district develop; (b) Model II: Severe environmental damage; (c) Model III: Blind robbing of resources.

2.2. Confusion in development of ecological sensitive area

Considering the specialty of ecological sensitive area, pure protection or pure development will both bring all sorts of problems. Especially under the Chinese background of urban-rural dual system, the ecological sensitive areas surrounding big cities will across the two major administrative units of city and rural area, the control standard

² Taking the Sino-Singapore Eco-Town and Caofeidian Eco-city for example, both pilot cities were located at the districts of saline and alkaline land and lack of fresh water. Taking Dongtan Eco-Town for example, many cutting-edge technologies such as sea water desalination, microbiological treatment technology, waste recycling technology are applied and tested.

³ For example, the Sino-Singapore Eco-Town is a eco-city with its cooperation and construction determined by agreement signing by the premiums of both China and Singapore; Caofeidian Eco-city was a major strategic decision made by the Tangshan municipal party committee and the municipal government based on the spirit of the instruction of "Building Caofeidian into a demonstrative area of scientific development" by the former General Secretary Hu Jintao.

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