

## Chapter 68

# A Paradigm of Constructing Industrial Symbiosis and Coupling in China's County–Region Economic Sustainable Development

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### ABSTRACT

*This chapter introduces the sustainable development of county-region economy under the constraint of natural resources and environment in China when parts of classic industries along the south-eastern coast are shifting to the poorer mountain areas and middle-western areas. It argues that the county regional economic development at the stage should focus on the agricultural growing and breeding their processing sectors, natural resource exploitation and its processing, manufacturing, tourism, and ecological industrial (shift) park, according to the resource endowment. The local government should guide the scientific planning of county-region industries' layout, structure, symbiosis, and coupling relationships. By means of environmental cost internalization, region industries' symbiosis and coupling size, roles of social network, cultivation of innovative culture, guidance of government subsidy, pressure from public monitoring, the market mechanism, and economic incentives will play roles in resource allocation. In practice, the local government or industrial authority can design the "lack in" value chain parts and package them into some feasible and profitable projects open to the market investors, encourage firms to participate regional industrial symbiosis and coupling, and construct a complete industrial chain or network, in order to realize the integration of closed-circuit industry, higher value-added ecological agriculture, tourism and related service sectors, creative economic industrial park, urbanization, and ecological environment. This will avoid the heavy-damage from traditional industrialization and urbanization on county-regional ecological environment, and then realize the harmony development of county-regional recycle economy, society, and environment.*

DOI: 10.4018/978-1-4666-4852-4.ch068

## INTRODUCTION

County-regional economy belongs to regional economy scope in which market allocates resource based on county-level administrative district boundary, taking county's city as the centre, town as the bond, and rural area as the hinterland (Gong, Shen, & Li, 2005). It is also the fundamental parts of national economy (Lu, 2008). County-regional economy largely belongs to small sized regional economy in which the infrastructure is not complete, industries are not developed, and agricultural economy is dominant and constrained by county-regional administrative district. But it is in China a kind of area which 800 millions of villagers reside in and live on. It is related to the national strategy by which a wide range of villagers jointly increase their wealth. It is strategically important for China's new county construction, national economy's coordinative and harmonious development. The main problems at China's current stage county-regional economic development include deficiency of basic production factors, insufficiency of county's common goods, big population of unemployed labor force with lower skills and difficulty of reemployment, insufficient fine and deep processing with the primary natural resources and agricultural products, unreasonable industrial structure, lagging tertiary industry development, etc (Lu, 2008). Part of China's county-regional economy fall into borderline regional economy between different provinces, and have their specific development rule (Luo, 2007).

The key of regional recycle economy is the cultivation and construction of good symbiosis relationships between the regional industries, to realize the "reducing, reusing and recycling" of materials and energy (Feng, 2004; Chertow, 2000; McManus & Gibbs, 2008). The key of creative economy is increasing the value-added and core competitiveness of goods by product innovation and industrial chain extension (Cao, 2007). Recycle economy and creative industries can, to some extent, deal with the existing problems in county-

regional economy. To systematically investigate the county-regional economy, recycle economy, creative economy and their relationships between each other, to study how recycle economy assists county-regional economy solving the hard lock of environment deterioration, to study how creative economy assists solving the problems such as lower value-added of products, unreasonable industrial structure, and big unemployment by extending and improving industrial chain and constructing good symbiosis relationships between industries, to realize harmonious development of economy, society and environment, have important theoretical and practical significance.

The industrial transfers from the coastal well-developed provinces in China have raised severe challenges to county-regional economy's sustainable development. In order to avoid the old model of "first development and later rehabilitation" during the preliminary stage of industrialization and to protect the natural resources and ecological environment in mountain areas, China should construct its modern industrial economics system under the guidance of recycle and creative economic theories. For industrial transferring, urbanization and agricultural economic industrialization, China should insist, under the recycle economic frame, taking the good industrial symbiosis design and its cultivation mechanism as the breaking through gate, to realize the harmonious economic development of well-developed central cities, county-regions and natural environment. Under the frame of creative industries theory, China should construct modern ecological agriculture, modern tourism and tertiary industries to particularly increase the product value-added of featured agriculture and tourism industries by extending industrial chain and building the more-widely industrial symbiosis. This chapter will, taking Deqing county of Guangdong as an example, preliminarily investigate the industrial symbiosis and coupling of China's county-regional economic sustainable development under the situation of industrial and labor dual shifting.

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