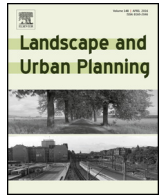




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Research paper

Tension in the periphery: An analysis of spatial, public and corporate views on landscape change in Iskandar Malaysia

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HIGHLIGHTS

- Special economic zones constitute serious threats to the integrity of peri-urban landscapes.
- Governments apply pro-investor planning instruments in the urban peri-urban areas.
- Rapid land development in the peripheries foster marginalisation of the poor.
- Public perceive little direct benefits from capital influx into peripheries.

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ABSTRACT

Southeast Asian urban peripheries have recently become destinations for the global capital influx. In this region, governments are promoting investments in the peripheries through planning and development of special economic zones. The implications of the ongoing transformations of the peripheries on people and ecosystems are least investigated. This study examines landscape change in one of the largest SEZs in Southeast Asia, Iskandar Malaysia—from investors, people and landscape data points of view. The short time changes (2006 and 2010) in the composition of urban built-up areas, mangroves, forests, and agricultural landscapes were calculated using GIS and FRAGSTATS. The study also used the Rasch model to measure public perceptions on the implications of the changing urban peripheries. On the other hand, the analysis of investors' advertorial handbills and leaflets revealed their views on the transformation of landscapes of urban peripheries. Thus, between 2006 and 2010, urban built-up areas increased by 25.8, and this has caused agricultural landscapes to decline by 15.5% while mangroves and forests decreased by 12.4% and 3.9% respectively. Unsurprisingly, the public showed widespread dissatisfaction with the effects of the recent investments on the functions of landscapes in urban peripheries. According to the study findings, investors showed apathy towards protection of critical ecosystems. Indeed, the new land development activities explicitly promote exclusion of the poor members of the society.

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1. Introduction

For centuries, urban peripheries have been subjects of scholarly discourses. Indeed, the 19th century theoretical assumptions of Racardo and Von Thünen and the 20th century works of Alonso, Christaller, Lösch and more recently Krugman's 1991 core-periphery model have guided analysis of spatial, social, and economic relations between cities and their peripheries (Mather, 1986; Baldwin, 2001; Forslid & Gianmarco Ottaviano, 2003; van Leeuwen, 2010). In the 21st century, globalisation has exposed urban peripheries of the emerging economies to the influx of investments from very distant places. At least, there is evidence

from some of these countries that the rapid transformation of urban peripheries exerts pressure on landscapes and exacerbates poverty and inequality (Padgham, Jabbour, & Dietrich, 2015). Nevertheless, governments in these transitioning economies promote capital influx into urban peripheries even when it undermines public interest and the provisions of the local planning institutions (Akçali & Korkut, 2015; Vongpraseuth & Choi, 2015). According to de Noronha and Vaz (2015), small and medium towns have become the main targets of economic growth driving the massive transformation of landscapes of urban peripheries.

Traditionally, urban planners, geographers, and policymakers have depended on what Jiao (2015) called arbitrary spatial metrics to measure rapid urban growth. However, the multiple consequences of capital influx are complex (O'Mara & Seto, 2014). Here, it is important to stress that spatial metrics remain critically impor-

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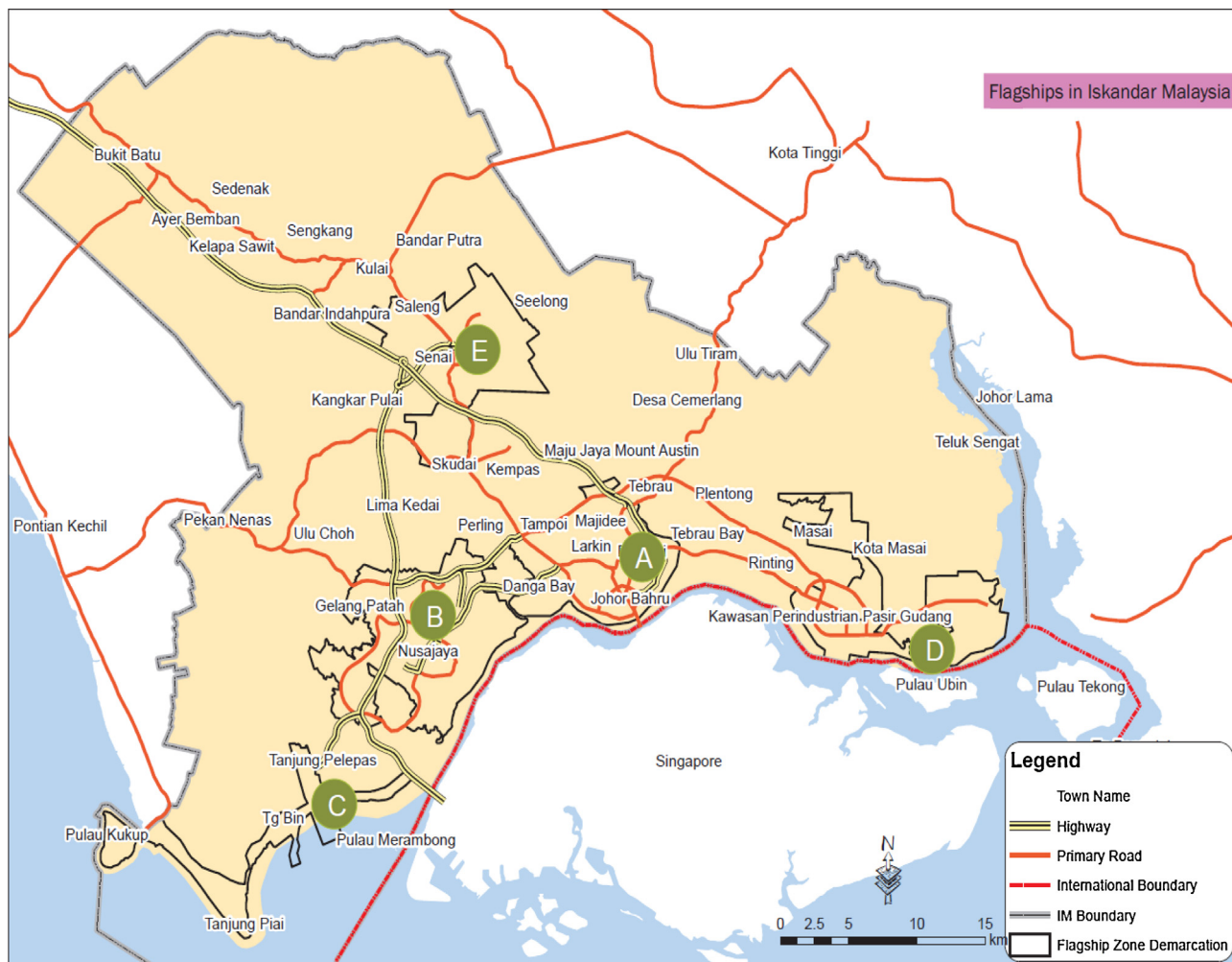


Fig. 1. Map of Iskandar Malaysia showing its investments corridors/flagships A–E and the numerous peripheral towns.

tant tools for examining how landscapes in the peripheries respond to the capital influx. A number of studies have examined landscape changes arising from economic driven fragmentation of landscapes of urban peripheries (Sui & Zeng, 2001; Xie, Yu, Yongfei, Xing, 2006; Li, Hilario, & Hien, 2008; Barau & Qureshi, 2015). While such studies have made modest contributions to our understanding of economically induced urban and peri-urban landscape changes, they have neglected the voices of people and roles of businesses.

Indeed, urban peripheries have a wide range of cultural landscape services and functions. However, the attention of most researchers has been on agricultural values and functions of peri-urban areas (Binns, Maconachie, & Tanko, 2003; Dossa, Abdulkadir, Amadou, Sangare, & Schlecht, 2011; Padgham et al., 2015). With increasing urbanisation, agriculture in the periphery is bound to decline and sustainability effects of this process include urban heat island, depletion and pollution of water resources, increased greenhouse emissions, biodiversity loss, social inequality and increasing poverty (Buyantuyev & Wu, 2010). Thus, the integrity of urban peripheries is very uncertain.

Since about three decades ago, urban peripheries have become fertile grounds for establishing special economic zones (SEZs) in several parts of Asia (Farole & Akinci, 2011). The SEZs are mostly private and capital-driven geographic expressions, which include export-processing zones (EPZs), free trade zones (FTZs), economic cities, technology, science and industrial parks. Some scholars have criticised what they see as sustainability risks arising from the proliferation of SEZs in Asian countries (Chaudhuri & Yabuuchi,

2010; Wang, 2013). Nevertheless, some of the SEZs are designed with strong claims for supporting sustainability through ambitious green growth agenda (Sheng & Tang, 2013). Even before the recent proliferation of SEZs, the dynamics of Southeast Asian peripheries have appealed to urban researchers. For instance, Terry McGee coined the term *desakota* which originates from Indonesian Bahasa words: *desa* for a village and *kota* for a city (Ginsburg, 1991). This term describes Southeast Asian hybrid urban-rural system that stretching far away from the urban core into adjacent peri-urban areas (McGee, 2008). The other terms McGee associates with the term *desakota* include peri-urbanisation, peri-urban zones, the extended metropolitan regions, dispersed metropolis, interlocking metropolitan areas, living perimeters, and metrozonal areas. Human geographers have made some assumptions about *desakota* region (Moench & Gyawali, 2008; Pelling & Mustafa, 2010). The assumptions on *desakota* imply that the area is linked to metropolitan area; cheap labour is available and it is globally connected. In addition to that, its land and natural resources are under stress; while modern technologies and informal sector of are flourishing.

McGee's model triggered an interest among landscape scientists and urban researchers in exploring spatial and ecological values and implications of the changing *desakota* landscapes (Li et al., 2008; Zhu & Guo, 2012). Another important feature of Asian core-periphery system is the phenomenon of an urban village. Urban villages also called *kampung* or *kampung* in Indonesia and Malaysia have variants in China, the Philippines, and Thailand (Bunnell,

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