

Sustainability through Subsistence: The Case for De-urbanization in Malaysia

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0297

The Asian Conference on Sustainability, Energy & the Environment 2013

Official Conference Proceedings 2013

Abstract

Industrialization was the catalyst for the growth of cities in Southeast Asia, in particular Malaysia. However, in many cities industrialization has peaked and is now declining. This raises the issue of increased urban poverty as a significant problem facing these cities in the 21st century.

Evidence from other developing countries is that faced with the choice of urban poverty or rural subsistence, there appears to be a trend towards de-urbanization. As Malaysia is unique in imposing laws that protect rural land ownership, this study investigates the capacity of the available land to absorb migrants from the city and seeks to identify whether the returning migrants have the capabilities required to maintain a subsistence lifestyle.

This paper presents a case study analyzing the trends of urban to rural migration in Malaysia. An audit of land capacity was carried out in a typical kampong and an investigation of the capability of migrants has been done in both urban and rural areas. In conclusion, this study has found that the land abandoned by the rural-urban migration of the 1970s is available and remains accessible for future use. The findings also identified several examples of returnees who have shown that they have adapted well to a rural lifestyle. The results indicate that there is evidence that de-urbanization can result in a sustainable lifestyle through subsistence living in Malaysia.

Keywords: *land capacity, society capability, de-industrialization, de-urbanization, kampong*

1.0 Introduction

The future of industrialization is rapidly changing and is in decline in the countries that were industrialized early (Whittaker, Zhu, Sturgeon, Tsai, & Okita, 2010). Malaysia was one of the first countries to industrialise in Southeast Asia and has been in decline since the first few years of this century (Rasiah, 2011). Malaysia's economic growth has been largely dependent on its resources of oil and gas in the South China Sea. The abundance of oil and natural gas that fuelled industrial growth has peaked and the depletion of resources is threatening economic recovery (Byrd, 2008).

The dwindling supplies of oil and gas in Malaysia will affect production in the industrial sectors, as with food production and job opportunities. Without these basic resources, cities will lose the vital components of economic growth.

The failure of cities as engines of growth will also affect social structures and livelihoods. As a city fails, jobs, foods and the safety of the population become less secure. Society in general will face economic hardship, resulting in urban poverty. With evidence emerging of de-industrialization, will there be a concomitant return to rural living, a case of de-urbanization?

In Malaysia, industrialization has not only improved infrastructure in the cities, but also life in rural areas through an improved electricity supply, better health services, and an increased investment in the agriculture sector. This has resulted in a reasonably high standard of living in rural areas (Byrd H., 2012). Therefore, the future challenge of poverty in Malaysia does not necessarily concern the rural poor. The future problem may instead be the urban poor who lack any form of resilience, and have forgotten the traditional ways of subsistence living.

Malaysia is fortunate to have significant areas of fertile reserve land that are covered by a unique legislation. This Malay reserve land can only be owned and held by the Malays and they are not permitted to sell (Leete, 2007; Zaki, Hamzah, Ismail, Awang, & Hamid, 2010). This legislation has been discussed by, among others, Zaki et. al (2010) who found that although the land tenure system in Peninsular Malaysia has undergone several changes since 1957, the Malay reserve land and the customary land tenure system are still much implemented especially among the rural Malay society. However, most of these reserve and customary lands have been abandoned due to rural-urban migration during the industrialization period of the 1970s. This has left the door open for the urban migrant to return to the land.

Another factor that has led to the trend of de-urbanization in Malaysia is the mobility of the population. McGee (2011) and Hadi et al. (2010) have shown that population movement has resulted in new areas of settlements or re-settlements. From the compact cities, people have begun to relocalize, a form of decentralization of the cities into sub-urban and new town developments, which are part of a trend towards counter-urbanization (Hadi, Idrus, Shah, & Mohamed, 2010; Idrus, Hadi, Shah, & Rainis, 2010; T. McGee, 2011). This movement has resulted in people living closer to rural areas.

Demographic statistics have shown a decline in the urban population since the early 20th century (Eng, 1995; Talha R., Baharudin N., & Jantan I., 2007). That year, the Department of Statistics Malaysia Census recorded that the population growth in cities decreased from 35% in 1995 to 26% in 2005 (Talha R. et al., 2007). This statistic was supported by Elias et

al.(2009) in his article on migration trends and patterns in Malaysia, which predicted a continuous urban population decline to 14% of urban population growth in 2015 (Elias O. K. & Ramli R., 2009).

Therefore, de-urbanization is a possibility for those urban dwellers that cannot adapt to the new order of an unsubsidized, failing, urban economy (Byrd H., 2012). The question arises; “Do the rural areas have the land capacity to cater to the potentially large number of returned migrants, and are those urban returnees capable of working on the land again?”

Many previous studies have focused on how to create a sustainable city and there has been an emphasis on increased compaction of cities. For example, Newman (1999) has argued for increased density on the basis of both environmental and social benefits, while Al-Kodmany (2011) has argued for density on the basis of an increased population, and Jenks (2000) has highlighted effective settlements and urban transportation. However, these arguments are based on the assumption that continued economic growth is sustainable. This paper does not make the assumption that economic growth is sustainable and focuses on ‘de-urbanization’; resilience that can be achieved by a return to subsistence living in rural areas as one of the alternatives to urbanization.

This paper has adopted the ‘*sustainability through subsistence*’ concept as one of the possibilities if de-urbanization occurs. This research uses a case study to measure the land capacity that will be available and accessible for returned migrants. It will also discuss a sample of the returned migrants who have adapted well and are living, out of poverty, in rural settlements (*kampong*).

2.0 Sustainability through Subsistence

2.1 Sustainability: Issues & Challenges of Industrialization in Cities

The concept of sustainability has become a key idea in national and international discussions for 30 years (Doughty & Hammond, 2004). The Brundtland Report (1987) and the 1992 Rio ‘Earth Summit’ raised attention about which global system would satisfy “the needs of the present without compromising the ability of future generations to meet their own needs” (Environment & Development, 1987). This has stimulated further discussions on sustainable development, urban sustainability and sustainable urban.

The sustainability concept has been greatly discussed by Ian Douglas (1983,1992), Girardet (1990, 1996), Jenks (2001), Newman (1999) and Al-Kodmany (2011). Many of their major contributions are links with the cities and address issues of urban sustainability. Jenks (2001) and Girardet (1990) agree on compacting cities to make them more sustainable, while Champion (2001) and McGee (1971, 1987) emphasize the idea of accelerating urban growth to concentrate people into larger agglomerations in order to make cities livable. Both these concepts agree, however, that cities would continue to lead economic growth. This is related to the discussions of the Urban Foundation (1993) on urban management, which has a section on enhancing urban productivity, citing that “the economic future of a developing country lies in the productivity of its cities” (cited in Drakakis-Smith (1995).

Drakakis-Smith (1995) on the contrary, discusses the present inadequate environmental situation, which raises various threats to established sustainable urban development such as the issues of employability, poverty, basic needs and human needs. The issue of limits to city

growth by Meadows, Randers, & Meadows (2004), has also drawn world attention to the city's ability to be sustainable. Recent publications by other scholars further discuss de-industrialization trends (Rasiah, 2011; Rowthorn, Rowthorn, & Ramaswamy, 1997).

Many agree that de-industrialization has contributed to a widening income inequality and the displacement of workers, which has consequently led to urban poverty. This situation has been further discussed by David Brady and Michael Wallace in their article entitled 'Deindustrialization and Poverty: Manufacturing Decline and AFDC Reciprocity in Lake County, Indiana 1964-1993', in which Brady et.al (2001) conducted a survey in Lake County, Indiana to investigate how de-industrialization has contributed to the county's impoverishment by measuring the percentage of population receiving Aid to Families with Dependent Children (AFDC). Their findings of a decrease in the percentage of giving out money for fund which supported Bluestone and Harrison's (1982) suggestions that de-industrialization can lead to a loss of both family wealth and community, and can lead to poverty. The concern with poverty is the ability of the urban household to achieve its own form of sustainable development which impinges on the sustainability of urban situation as a whole (Schwarz, 1993).

This urban poverty issues is a substantial problem due to the high urbanization rate of poor (Drakakis-Smith, 1996; Ravallion, 2002). Drakakis (1996) has argued that the most significant problem facing emerging economies is not the rural poor but the new urban poor "*Indeed the problem goes on to state accepting the poor as a necessary transition of the urban scene*" (Drakakis Smith, 1996). Drakakis (1996) has put forward the case that the pull factors of the city that offer opportunity and wealth are often unreal and take people from rural poverty, with assemblance of resilience, to an urban poverty that has no self-determination.

It has also been argued (Whittaker et. al, 2007) that the urban middle classes in the rapid developing emerging economies have also suffered. They suggest that there has been both a 'double burden of disease' and a 'double challenge of education' that has restricted human development (Monteiro, Conde, & Popkin, 2002; Organization, 2010; Popkin, 2002). The 'double burden of disease' relates not only the traditional diseases that continue in urban areas, but also the new diseases such as obesity due to increased consumption of fat and a sedentary lifestyle. Meanwhile, the 'double challenge of education' as been argue by Dore (1976) relates to the problem of divided societies where there remains not only inadequate education amongst low economic groups but also the mass education of middle-income causing 'credential inflation' without significantly increasing the quality of job prospects.

2.2 Subsistence Way of Life

One way of reducing the economic hardship result from both industrialization and de-industrialization is by implementing a return to subsistence living. Subsistence living can be defined as self-sufficient living, where the society focuses on growing enough food to feed and clothe-themselves and their families (Sharif, 1986, 2003; Wharton Jr, 1969). Sharif (1986) added that this concept resembles the traditional way of living, where people managed to work and survive with what prosperity land and nature can offer.

The experiences of countries that have already faced de-industrialization have proved that self-sufficient living could have many socio-economic benefits for society. Alteri et.al (2012) and Rosset (1997), found that by participating in intensive farming, it can contributed to the improvements in the reduction of the food crisis in Cuba (Altieri et.al, 2012; Rosset, 1997).

In Detroit, Hill (1983) and Sugrue (2005) have also highlighted the fact that working on the land has helped overcome industrial failure and allowed people to survive. This finding has been supported by Wylie-Kellermann (2009), who discusses the implosion and collapse of industrial growth that has been happening over the last few decades in Detroit, which is finally catching up with the rest of the country, and with the global system, by growing back the culture of self-subsistence agriculture (Wylie-Kellermann, 1989; 2009). He adds that after the industrial heyday of Detroit had turned to rust, the city re-adapted by nourishing projects on a human scale, working on the urban community and struggling to encourage an economy of creativity and self-reliance.

The concept of 're-adapt' allows people to continue living a subsistence lifestyle (Wharton Jr, 1969). According to Chambers & Conway (1992) a livelihood is considered sufficient when the society can cope and recover from economic failure or is able to maintain its capabilities and assets. This idea was supported by Omar et al. (2013) in their article entitled '*Sufficient and Sustainable Livelihood via Community Economy: A Case of Natural Farming Program in East Malaysia*' which discovered that a natural farming program is an affordable community economic model that can improve sustainable livelihoods in rural areas (Omar, Ishak, Moen, & Arshad, 2013).

Omar et. al (2013) analyses on how the natural farming programmes can increased the society household incomes as well as reducing household food expenditure by developing edible gardens around their compounds. Their results show that the natural farming program has not only benefitted the household income but has also improved social aspects such as health, knowledge on agriculture and relationships among family members. These findings concluded that the effort of '*working on the land*' was able to contribute not only towards supporting subsistence living but also succeeded in self-generating household income.

In addition, this paper addresses '*subsistence of life*' as a way in which people can use new technologies to assist traditional life. Rural areas have vast natural resources such as land and plants which allow alternative technologies to be developed and used locally. For example solar power, which creates energy by utilizing rooftops and awnings in the big cities, has the potential to produce greater quantities of energy in the large fields and compounds of the sub-urban (Tumber, 2012). Tumber (2012) has given a good rule of thumb on the ability that rural areas have to generate solar energy, which is that one megawatt of solar-generated power can be produced by about eight acres of land. This is not possible within a dense, compact megacity.

Other researchers, such as Millinger (2012) have discussed the potential of solar power in the rural areas of India, which are able to increased two times more than the urban potential in producing solar power for the household electricity supply (Millinger, Mårilind, & Ahlgren, 2012). This situation has not only catered to the local demand, but has shown further benefits by reducing household expenses and generating income for the rural community.

Land with natural resources has the potential to be developed using new technologies, providing a way for rural communities to adapt well to self-sufficient living while remaining far from poor. This paper investigates the question of how much land capacity and social capability Malaysia has to support a subsistence way of life if de-urbanization occurs.

3.0 Malaysian Case Study

3.1 The Study Area

Prior to the growth created by industrialization in the 1970s, there had been a decline in agricultural development in Malaysia (Drabble, 1993). Over 800,000 hectares of agricultural land was abandoned or underutilised, and Negeri Sembilan was reported to be the state that faced the highest levels of decline. Kassim A. (1989) stated that 53.8% of agricultural land in Negeri Sembilan was underutilised in 1981. She added that these abandoned agricultural lands remained subject to '*Tanah Adat*', or customary land use, meaning that they are protected by laws and cannot be sold. For these reasons, Negeri Sembilan has been purposely chosen for this study, not only because of its abandoned land, but also for the unique history and laws surrounding customary title.

The case study is based in the *mukim* of Seri Menanti, in the district of Kuala Pilah, Negeri Sembilan, which is still considered the stronghold of *adat* (culture), especially as practised in the Negeri Sembilan royal household. Kampong Gunong Pasir in Seri Menanti, Negeri Sembilan was chosen as the sample area based on criteria such as its location in the foothills of the North-South range which cross Peninsular Malaysia, enabling the land to be fertile but not exposed to excessive development. The area is not accessible in terms of a daily commute and is far from any commercial area.

Kampong Gunong Pasir covers approximately 127.48 hectares and consists of 122 houses, only 61 of which are still occupied by the 208 residents. This research has deliberately selected a sample of 30 respondents to follow in regards to house and compound activities which are based on the available green area. The intention is to investigate the land capacity and social capability of inhabitants within the sample area.

3.2 Data Acquisition

The fieldwork study in methodology process was conducted as a three-phase survey, the stages of which are: macro-scale observations (throughout the kampong); an investigation of the micro-scale potential of land capacity; and an analysis of the social capabilities involved in readapting to the land.

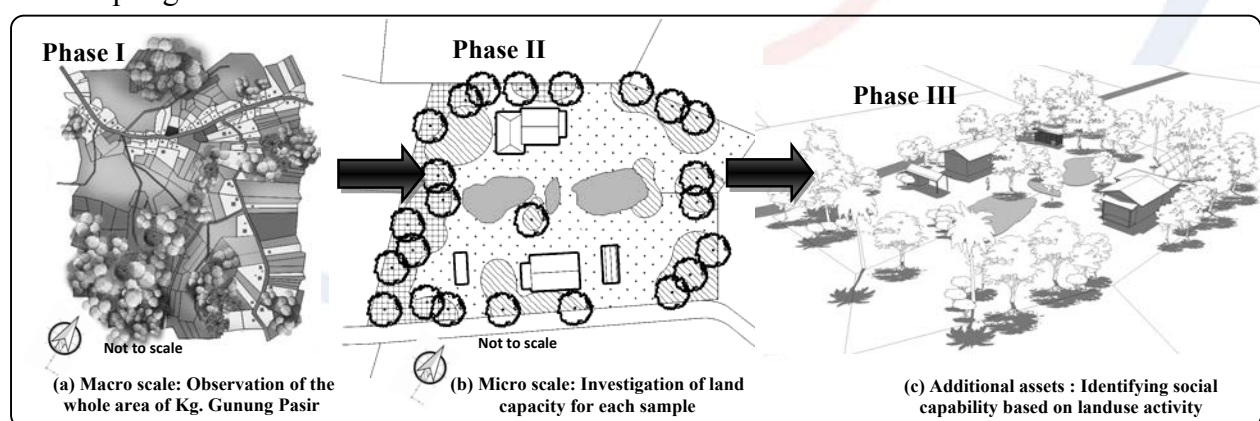


Figure 1: Stages involved in the case study in Kg. Gunong Pasir, Seri Menanti, Perak

3.2.1 Stage I: Observing the macro-scale of the land occupancy in Kampong Gunong Pasir

In this phase I study, two types of land use were analyzed by using secondary data from JUPEM Malaysia. This data was then digitized into a map by using a basic grid system in Arcview GIS. The first analysis was to measure the percentage of land used by agriculture,

and to look at the settlements in the years 1950, 1970 and 2012. The data was also transferred into tables and graphs to view the changing trends in land use.

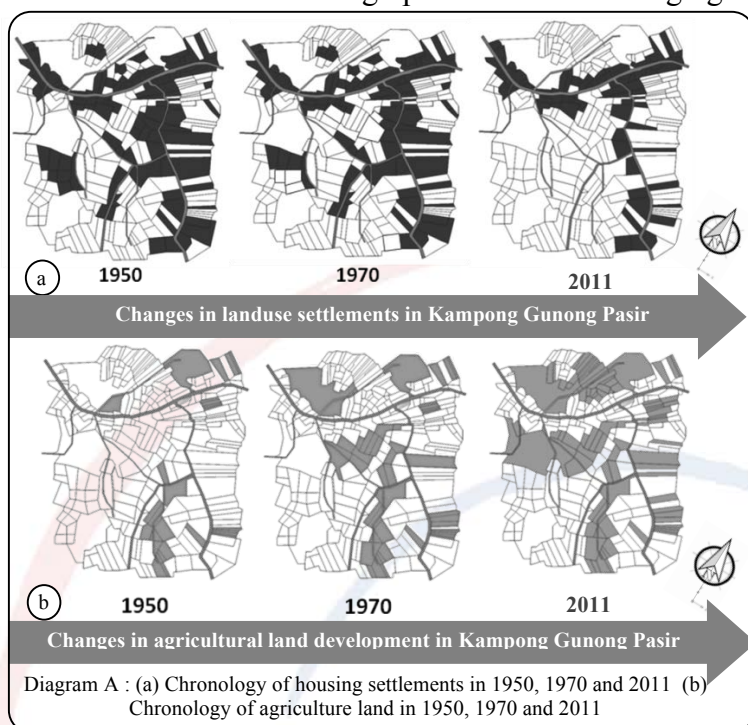


Figure 2: Diagram A shows the comparison between changes in landuse, housing settlements, & agricultural land in Kg Gunong Pasir

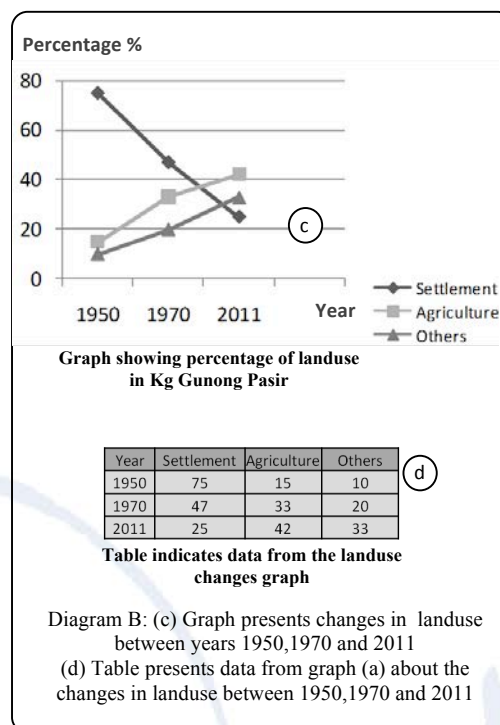
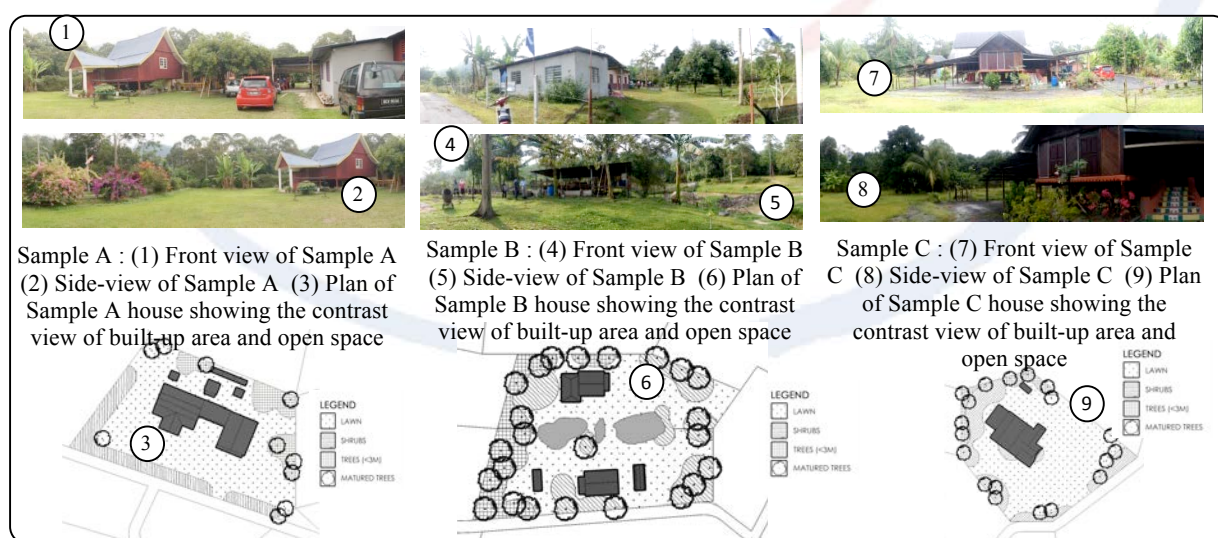


Figure 3: Diagram B shows the composite analysis of the landuse map for Kg Gunong

3.2.2 Stage II: Investigating the micro-scale potential of land capacity in each samples

In phase II, an audit of land was done in 30 samples of respondent houses and their compounds to identify and measure vegetation, arable land, abandoned land and additional assets owned by the respondents. The objective was to identify how each group utilizes their house compound and how this relates to their past use. The measurement was done using a basic grid technique in ArcView GIS 3.2.



3.2.3 Phase III: Analyzing a sample of urban returnees that have readapted to the land

Finally, from the total 30 samples of respondents, this study lists results from urban returnees who are working successfully with the prosperity of land. Most of them are working on their own land or in family ownership groups which vary in types, sizes and location. Researchers went to each respondent to do an in-depth interview. This analysis is intent on investigating how the urban returnee is able to readapt well to working the land and how they are managing to live out of poverty.

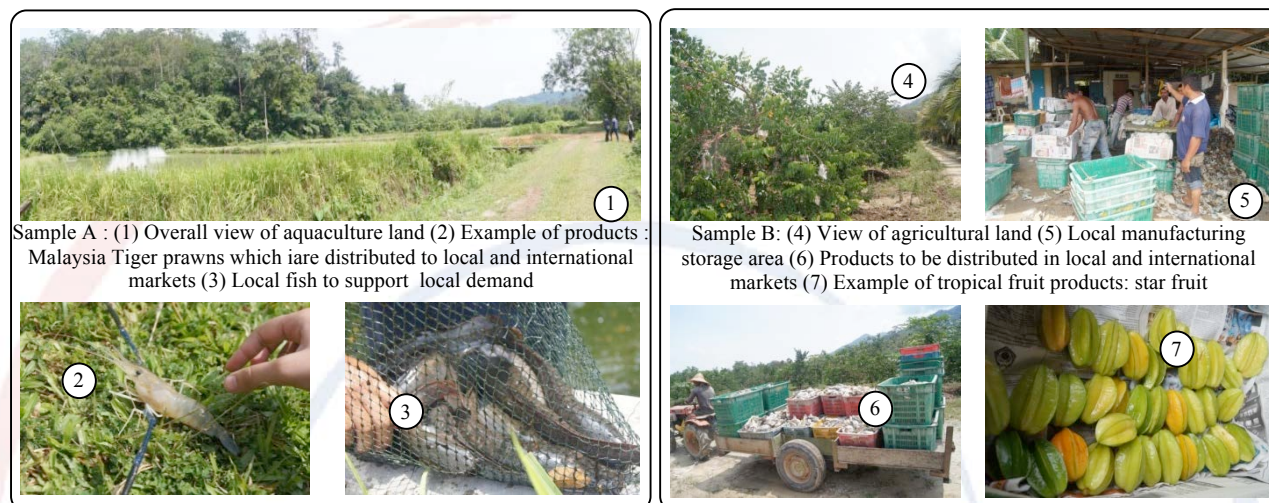


Figure 4: The picture shows an area of aquaculture owned by the urban returnees

Figure 5: The picture shows an example of tropical fruit production owned by the urban returnees

3.3 Data Analysis

Generally this quantitative study used ArcView GIS and SPSS software as tools in analyzing the data. The analyses are subject to the stages of the surveys.

3.3.1 Land use changes analysis

Analyses of land use change were performed on a grid basis, with reference to the secondary data and observations. This approach is one of the common methods used for spatial analysis and has been applied to analyzing land use patterns by (Abdullah & Nakagoshi, 2006; Haines-Young, 1992). Grids of 1kmx1km were developed using the GIS application of ArcView 3.2, which is suited to covering the whole study area (macro scale). For the grids at the border of the areas that were covered, less than 10% of the total land area was omitted to avoid inaccuracy.

3.3.2 Measuring the capacity of the Land available in case study areas

The same basic grid system was also applied to measuring the potential land capacity of each sample (at micro scale). For this analysis, the sample areas were divided into 1mx1m of grids in GIS to accurately record land use such as activities and functions, fauna and flora and other related information. At this phase of survey, a further questionnaire was also applied to compile further details on the additional assets owned by the respondents. All the data and criteria was then analysed by adopting the Spearman's Rho and Pearson Test in SPSS to measure the significant correlations between the observational data from land and the collective data from the questionnaires.

3.3.3 Measuring the Society capability on working back with land

This analysis is intended to investigate how the urban returnee is able to readapt to a self-sufficient way of life. It analyses data from questionnaires and interviews and gathers observations on land (if necessary). This phase investigated the significant relationship between the availability of land and income, social activities, and perceptions. Part of the test used in this phase was a frequencies analysis, Pearson and Spearman's Rho Test from SPSS. All data analysis is presented in graphs, tables, scatter plots and reports in the next (4.0) Results and Discussions sections.

4.0 Results and Discussions

4.1 Phase I: Landuse changes

Figure 2 (in section 3.2.1) shows the changing patterns of landuse activities between three temporal years. Clearly, there was a significant decrease in settlement areas from the 1950s to the 1970s and up to 2011 (refer Figure 2 (Diagram A(a))). These changes occurred during the rural to urban migration period, when most of the houses (settlements) were left unattended and abandoned.

This unattended land is protected under the Malay Reserves Land and Customary Land Act, meaning it has legal protection and cannot be worked or sold. This situation has led to the agricultural decline in Negeri Sembilan in early 1980s (Kassim, 1988, 1989). Kassim (1989) also highlights that this landuse changes situation has shrink the agricultural mass production into domestic used due to the loss in local demand. However, beginning in the early 20th century, the 9th Malaysia Plan has been revised, and has started to raise the attention needed to re-emphasize the importance of agriculture in Malaysia's economic development.

This effort can be seen in the Figure 2 (Diagram A(b)), where agricultural land has started to replace abandoned settlements. However these changes are only possible on the Malay Reserves land, where government policy allows developments which might be of benefit to society. The customary lands remain unattended.

4.2 Phase II: Land availability and capacity in Kg. Gunong Pasir, Seri Menanti, Neg. Sembilan

Firstly, to investigate land capacity, this study measured the green area (land that is not used or is covered by a permanent building) by using the basic grid technique. Figures 6 and 7 shows the percentage of green ratios and a ranking of land availability in the each household dwellings. Generally, the graph shows that each house in the *kampung* has a minimum of 30msq of green area. Both graphs indicate where the ratio of the green areas in each households unit reached the minimum of 50% of the overall house compound, showing that each house have green areas.

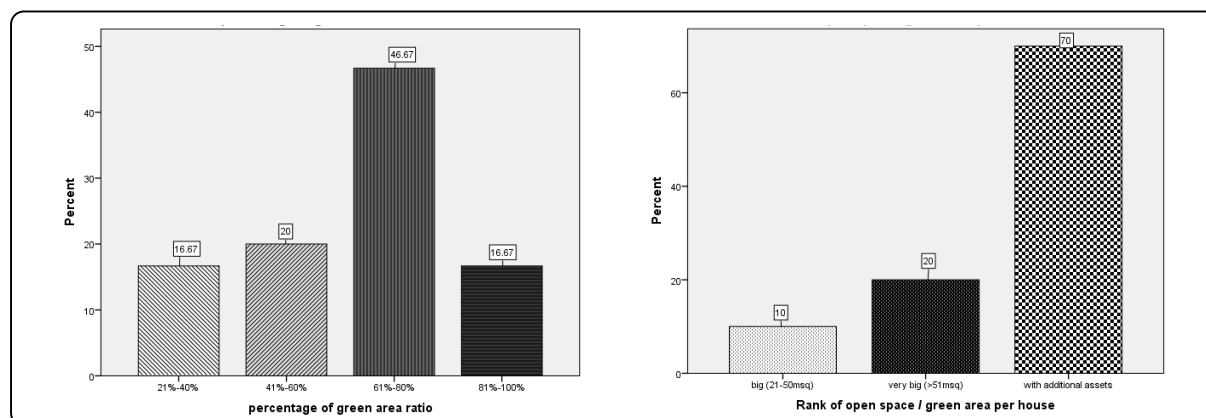


Figure 6: Graph showing the percentage of green ratio in Kg. Gunong Pasir

Figure 7: Graph showing the rank of land availability within respondent houses

Next, is to identify the factors that might contribute to the availability of a green area in each individual dwelling. The time spent in cities and the time the respondents have spent in their *kampong* were both analyzed after people returned to see if there was a significant correlation between previous experiences and the ability of the respondents to adapt to the land.

By using the bivariate correlation of Pearson's Test, an analysis was made of the correlation between the **length of time respondents lived back in the *kampong*** with the **size of the green area per dwelling**. The concern is to see whether a longer time in the *kampong* contributes to a greater effort being made on the land. Results demonstrate that $p=-0.314$, which shows that the correlation is not significant (for $p<0.05$).

Meanwhile, the bivariate correlation test between the **duration living in cities** with the **size of green area owned in each household** has also been tested. This Pearson's Test also resulted into a non-significant correlation of $p=0.29$. This shows that the dependent way of life created in cities does not influence the urban returnee's activity and perception to land when they return.

Therefore, this study found that both the living in cities and time spent in the *kampong* after returning does not have a significant correlation in terms of the size of green land available. The results show that people are not influenced by their previous experiences but adapting with current situation.

4.3 Phase III: The returnees' capability to readapt to the land

In phase III, several tests have been made to identify the relationship between factors that contribute to the returnees' capability to readapt to the land. This study analyses the **reasons that made the urban migrant return**. Generally, the investigation shows that people return for a reason, the most common of which is to fulfil the family's will (inherited land), 40% of the total respondents, followed by 26.67% for retirement reasons and the search for better opportunities in the *kampong*. These reasons bring about the conclusion that most of the respondents migrated to the cities for temporary purposes only.

Besides the ‘pull factor’, where the government offers more education, jobs and income to the migrants, the culture in *Minangkabau* (Negeri Sembilan) of ‘*adat merantau*’ has also

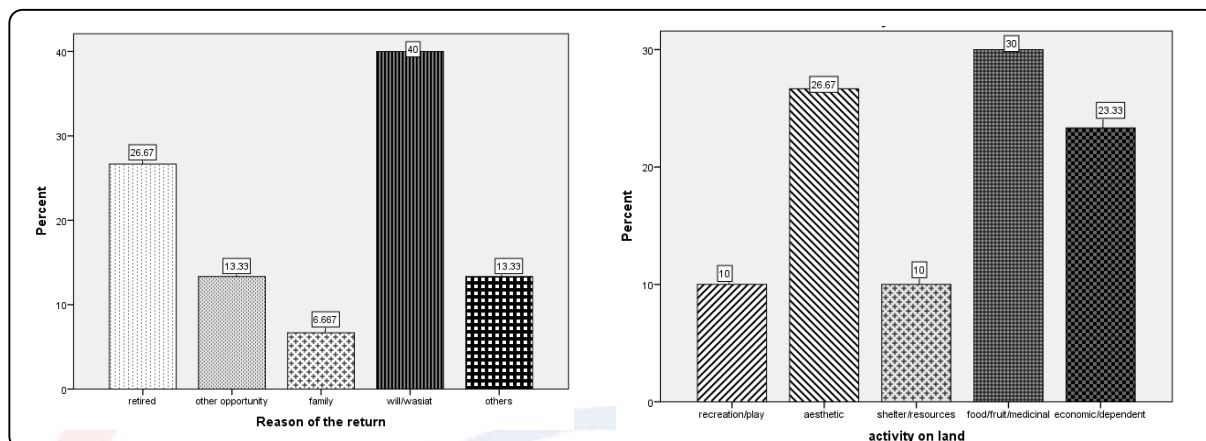


Figure 8: Graph showing percentages based on reasons to return

Figure 9: Graph showing the returnees activities on the land

became the push factor that has made people move. However, these pull and push factors are temporary, as the choice of returning back to the *kampong* is accessible at any time.

Figure 9 shows the activities that the respondents relate to on the land. From the graph, 30% of the total shows a connection through foods or edible products, while 26.67% are using land for aesthetic purposes and satisfaction. Another influential factor was economic dependence, an indication of 23.33%. This shows that land is able to serve as having an economic value which supports the new life in the *kampong*.

To support the investigation into the respondents’ activities on the land, this study has analysed a bivariate correlation significance test between the **activity on the land** with the **years of living in the city** (experience living in cities). The results of Spearman’s Rho Test show that the correlation is not significant $p=-0.238$. This shows that the urban returnees experience of living in cities does not have effect on how and what do they expected from land. Although the urban dwellers used to be dependent on manufactured products, they are still able to readapt to the conditions of life on the land when necessary.

An investigation was also done into the correlation between factors **experienced during childhood** (the upbringing in the *kampong* before migrating to the city) with the **current activities occurring on the land**. By using Spearman’s Rho Test again, the study found that there is no significant relation to the p value which is $p=-0.065$. This shows that the memory of previous experiences in the *kampong* does not have any significant effect on the returnees’ activities on the land.

From the tests on both; **experiences during childhood** and **life in the cities** does not influence the returnees’ capability on the land. Basically, people want to work towards a better quality of life. Champion (2001) and Rees (1996) agree that economic status has been a conventional motive to explain why people move. Chuen et. al (2011) argues that people adapt to the current situation and are not influenced by previous experience or thoughts about future generations.

Finally, this study has analysed a correlation test between the **respondent's sources of income** and the **ranking of that income**. Spearman's Rho Test also shows that there is no significant relation ($p=0.178$) between the source of income and the ranking of income. This indicates that there are no differences in the ranking of income whether working in cities or working on the *kampung*. Both incomes are sufficient to support the necessities. These findings are interesting as previously, (Ariffin, 1994) argued that people migrate to a city for a better jobs, education, income and a better quality of life. However, this study argues that there is no difference between achieving an income, education and health care living in cities as compared to living in a *kampung*.

Moreover, this study also supports the findings that previous experience does not influence the current way of life and that when people return, although they lack some skills and knowledge, they are still able to readapt to living on the land.

5.0 Conclusion

The audit on land that has been done in Kampong Gunong Pasir, in Negeri Sembilan, has shown that societies are able to achieve sustainability through subsistence. The results obtained from the surveys identified both potential in the land capacity which can be reutilized, and that the returning migrant has the capability to readapt to living on the land. About 50% of the unattended houses and land are due to rural-urban migration associated with the legislation on land ownership. This has created a significant potential for the land to be available and accessible for the return migrant, if de-urbanization occurs.

Moreover, the sample of current successful urban returnees, when combined with recent initiative such as the natural farming program (Omar et al., 2013), has shown that returning migrants are able to adapt well to a new kind of life and are capable of living above the poverty line while working on the land.

Thus, instead of facing economic hardship, caused by deindustrialization in the cities, working back on the land offers a subsistence way of surviving that is in line with sustainability. This can improve the environment and offer socio-economic activities and a healthy lifestyle, which lead towards a more resilient future.

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