EnvironmentAsia
The international journal published by the Thai Society of Higher Education Institutes on Environment

Available online at www.tshe.org/EA
EnvironmentAsia 7(1) (2014) 8-12

Impact of the Urbanization of a Small Town on its Hinterlands: Perceptions of Households in the Hinterlands of Vang Vieng, Lao PDR

Maniemai Thongyou [a], Bounthavy Sosamphanh [b], Thanapauge Chamaratana [c] and Monchai Phongsiri [a]

[a] *Center for Research on Plurality in the Mekong Region, Faculty of Humanities and Social Sciences, Khon Kaen University, Khon Kaen, Thailand*
[b] *Department of Geography, Faculty of Social Sciences, National University of Laos, Lao PDR*
[c] *Institute of Skill Development Regional VI Khon Kaen, Ministry of Labour, Thailand*

Abstract

This research aimed to study the perceived impact of the urbanization of a small town on its hinterlands by choosing Vang Vieng in Lao PDR as a case study. A questionnaire survey was conducted with 315 households in 12 villages surrounding the town. Data were analyzed by descriptive statistics, mean ranking and multiple regression analysis. The research found that the top ten most negative kinds of impact centered on environmental problems. Results of a Multiple Regression Analysis showed that the length of time the household heads had lived in the village positively influenced their perceptions, while the number of household members belonging to political parties and the proportion of type of agricultural production being changed to serve urban markets negatively influenced their perceptions, with the $R^2 = 0.133$. This research indicates that the environmental problems generated by the urbanization of a small town extended well beyond the municipal area to its rural hinterlands. Therefore, town development should set environmental protection among its first priorities, not only for the town itself but also to cover its rural hinterlands.

Keywords : urbanization; hinterlands; peri-urban; environmental impact; perception; Vang Vieng

1. Introduction

The world's population is quickly becoming urbanized. In 1950, less than 30 percent of the world's population lived in cities. This number grew to 47 percent by the year 2000 (2.8 billion people), and it is expected to grow to 60 percent by the year 2025 (UNDP, 2010). This shift is taking place much more rapidly in the developing world than elsewhere. Changes that used to take centuries are now occurring in a few decades, thereby creating many challenges. Unfortunately, few developing countries are adequately prepared for these changes. In addition, most of the policy discussion concerning global urbanization has focused on megacities, while the needs and vulnerabilities of smaller cities and towns have been overlooked (Kammeier, 2003).

Urbanization brings with it both positive and negative impacts not only on the urban area itself but also on the surrounding hinterlands, the areas interfacing distinctly urban and clearly rural areas. Changes in the hinterlands range from urban expansion to new employment opportunities (Janmanee and Thongyou, 2012), the decline of agriculture and environmental problems (Hoggart, 2005; Simon, 2008). Understanding the impact of urbanization on the hinterlands has significant implications because the ecological, economic and social functions performed in this area affect both the city and the countryside (Ravets *et al*., 2013). Sustainable growth of cities and towns depends on healthy and balanced relationships with its hinterlands, and vice versa (Allen, 2003). In this research, we explored the impact of urbanization of a small town in Lao PDR, a country that is predominantly rural based, but is one of the countries in which urban population is growing rapidly. Vang Vieng town in the province of Vientiane was selected as a case study. It is one of Lao PDR's fastest-growing towns due to the growth of the tourist industry. The town has a population of approximately 20,000. The number of tourists coming to Vang Vieng town was 250,000 in 2010 and is expected to reach 500,000 by 2020 (Lao National Tourism Administration, 2009). The growth of the tourist sector has created a great deal of pressure and many challenges not only for the town, but also for its rural hinterlands and the surrounding environment.

2. Materials and Methods

In order to examine the impact of urbanization on the hinterland, the study used the household in

hinterland villages as a unit of analysis. Three main research methods were employed.

1. Secondary data collection and document review - this method was used to analyze the urbanization process of Vang Vieng and to find existing information on the impact of urbanization.

2. Preliminary community - profile study - this method was used to identify basic characteristics of hinterland communities and key issues on the impact of urbanization. These data were an important input for the survey questionnaire design. Semi-structured interviews were used to interview key informants from four hinterland communities as well as key town administrators and planners.

3. Quantitative research methods - Households in the hinterland areas of Vang Vieng were the unit of analysis. The hinterlands were identified as the villages surrounding Vang Vieng town's municipal area. This area contains 12 villages with a population of 1,668 households. A sample size of 315 households was determined by using *F* Test of Variance Proportion in Multiple Regression/Correlation analysis (MCA) (Cohen, 1988). The systematic sampling method was used to draw sample households proportional to the size of each village's population by using the village's household data available at each village chief's office. Data were analysed by using descriptive statistics. A Multiple Regression Analysis was also used to identify factors that influenced the perceptions of the impact of urbanization in the hinterlands.

3. Research Results

3.1. The respondents and the hinterland households

The household respondents in this survey were predominantly men (75.9 percent of 315 households) at an average age of 47.2. Some 38.7 percent were born in other provinces, while 34.3 percent were born in the village where they were living at the time of the interview. Most of the respondents were married (92.4 per cent). Some 44.8 percent had only a primary education, while another 28.6 percent had completed lower-secondary school. In terms of occupation, 58.1 percent were farmers, followed by those who were unemployed, waiting for jobs, and housewives.

Some 56.2 percent of the surveyed households were located outside the municipal areas, with 94.9 percent living not more than 10 kilometres from Vang Vieng town. The average distance from the households to the town was 5.4 kilometres, with the average travel time of 21.8 minutes. The most common means of transportation was motorcycle (82.5 percent).

The households surveyed were composed of relatively young people. The average age of all members in the households was 27.1. The average income of the households was 2,874,682.1 kip[1]. The largest group of households (70.8 per cent) earned 1,000,000 – 5,000,000 kip per month. Most of them had a small plot of land, with 37.1 percent owning less than 5 rai[2], and 34.3 percent owning 5-10 rai. The average land holding was 8.2 rai per household. Most of the land was used for rice farming. The average size of rice land was 5.1 rai per household.

3.2. Linkages between hinterlands households and the town

The hinterland households of Vang Vieng town had various types of linkages with the town. The most important link was through health care. Up to 87.6 percent of the households received medical services provided by the town. The second most prevalent linkage was through education. More than one third of the households (36.5 percent) had members studying in the town. Apart from receiving social services, hinterland households also had economic relationships with the town. One-third of them (31.7 percent) sold their produce to the town, but only 15.2 percent changed the type of products to serve the town. A quarter of the hinterland households (25.1 percent) had some of their members work in the town, mostly as cleaners and workers in small hotels, guesthouses, restaurants and bars. Others were construction workers as Vang Vieng was growing rapidly. Another 21.9 percent were involved in other non-agricultural pursuits, mainly in small entrepreneurial activities such as running small food shops and food stalls, running small businesses in construction, mechanics, electricity and electronics repair, trade, and transportation. It is remarkable that 9.5 percent had already sold their land to towns people (Table 1).

3.3. Perceived impact of urbanization on the hinterlands

The impact of urbanization on the hinterlands as perceived by household heads was analysed by using mean ranking of each item of the perceived impact in terms of seven themes, namely household economy, village economy, village society, politics and administration, ideology and culture, women and youth,

[1] 1 USD = 7,822.47 kip (exchange rate on August 27, 2013)
[2] Rai is a unit of area measurement in Laos: 1 acre = 2.5 rai; 1 hectare = 6.25 rai

Table 1. Percentage of hinterland households classified by type of linkages with Vang Vieng town

Relationship with Vang Vieng Town	Yes percent	No percent	Total N=315
Having members working in the town	25.1	74.9	100
Having members working in cement factory near the town	16.5	83.5	100
Having members working in urban areas in other provinces	17.1	82.9	100
Supplying agricultural products to markets in the town	36.2	63.8	100
Changing type of agricultural production to serve markets in the town	15.2	84.8	100
Having non-agricultural economic activities with the town	21.9	78.1	100
Having members studying in the town	36.5	63.5	100
Using medical services provided by the town	87.6	12.4	100
Using public government administration services in the town (certification of birth, marriage, death; land registration; tax payment)	6.3	93.7	100
Using other services in the town (shopping, recreation, travel services)	1.3	98.7	100
Selling land to people in the town during the last ten years	9.5	90.5	100

and environment. Each theme contained 5-12 items. The respondents were asked to give their perceptions of the impact of urbanization on each item, with a ranking from 1-5 to reflect the perception that the situation was getting: much worse (1), worse (2), no impact (3), better (4) and much better (5). The highest score was 5, indicating that urbanization has made the situation much better than before.

3.3.1. Favourable impacts

Analysis of mean ranking indicated that the most favourable impact was on educational opportunities and people's participation in local administration, specifically the village committee. Both received the same high ranking (*mean = 4.17* out of *5.00*). Other favourable impacts were related to the overall quality of life and standard of living, socially (*mean = 4.13*) and economically (*mean = 4.05*), at both the household and village levels. It is notable that Vang Vieng hinterland households could enjoy communal life in their village. Along with the expansion of the town, local people could enjoy mutual help and support among themselves (*mean = 3.79*) and community solidarity and social cohesion (*mean = 3.96*). In addition, they could also enjoy women's participation in their village's decision making (*mean = 3.95*) (Table 2).

3.3.2. Unfavourable impacts

Urbanization did not bring about only positive impacts. In what follows, we will discuss the most unfavourable impacts that received negative ranking. The results made it very obvious that environmental impacts were the most unfavourable and worrisome. Nine out of ten items with the lowest mean ranking were environmental impacts. According to the perception of the hinterland households, urbanization had the greatest negative impact on the quality of air (*mean = 2.21*) and quality of water resources (*mean = 2.30*). Urbanization made food from natural resources less available (mean = 2.47). People also complained about noise pollution (mean = 2.60) and the quantity of solid waste (mean = 2.70) from the town which was dumped into the river and landfills. New construction (roads, houses, offices) created environmental problems in the villages, e.g., floods, destruction of scenic views (mean = 2.79). The overall quality of natural resources and the environment were deteriorating due to rapid urbanization (mean = 2.84) (Table 2).

3.3.3. Factors influencing perceptions of the impact of urbanization

A Multiple Regression Analysis was used to identify the most important factors that influenced the perceptions of household heads on the impact of urbanization on the hinterlands. The research found that the length of stay of the household in the village (Beta = 0.197), number of household members belonging to political parties or other town-based organizations (Beta = -0.241) and proportion of type of agricultural production being changed to serve markets in the town (Beta = -0.152) were factors which influenced their perceptions of the impact with the $R^2 = 0.133$ (Table 3).

Factors that were included in the analysis but were found to not significantly influence the perceptions were: age of household head, average age of household members, monthly income of household head, monthly income of all household members, size of land holding of household, number of close neighbors, number of household members working in the town, number of

Table 2. Top ten mean ranking of most favourable and most unfavourable impacts of urbanization of Vang Vieng town on the hinterlands

Rank	Most Favourable Impacts	Mean	Most Unfavourable Impacts	Mean
1	Education opportunities	4.17	Quality of air in village	2.21
2	People's participation in local administration (village committee)	4.17	Quality of water resources	2.30
3	Overall quality of life – socially	4.13	Availability of food from natural resources	2.47
4	Overall standard of living of people in the village – economically	4.05	Noise pollution in village	2.60
5	Employment opportunities of villagers	4.05	Quantity of solid waste from Vang Vieng town	2.70
6	Overall standard of living of the households - economically	4.00	Shortage of farmland of villagers	2.74
7	Vang Vieng Town becoming international tourist attraction creates awareness of the outside world among the villagers	4.00	New construction (roads, houses, offices) creates environmental problems in village, e.g. floods, destruction of scenic views	2.79
8	Mutual help and support among the villagers	3.97	Quality of soil for agriculture	2.79
9	Community solidarity and social cohesion	3.96	Urban bias policy creates problems for the village, e.g. dumping of urban waste and leakage of polluted water	2.83
10	Women's participation in village decision making	3.95	Overall quality of natural resources and environment	2.84

Table 3. Factors influencing perceptions of household heads on the impact of urbanization on the hinterlands in Vang Vieng

Independent variables	b	Beta	Sig.
Length of stay in the village	0.203	0.197	0.001*
Number of household members being members of a political party	-7.052	-0.241	0.000*
Proportion of change in type of agricultural production to serve markets in the city	-0.044	-0.152	0.006*
$R^2 = 0.133$ $F = 2.849$ $Sig\ of\ F = 0.000$ $n = 315$			

household members studying in the town, number of household members working in towns in other provinces, size of land sold to townspeople during the last 10 years, proportion of non-agricultural activities with markets in the town, and proportion of agricultural produce sold to markets in the town.

4. Discussion

This research has shown that environmental problems were the most worrisome concern of the people in the hinterlands of Vang Vieng town. Our in-depth interviews revealed the fact that many environmental problems were caused by the cement factories located near Vang Vieng town, and also by the mountain blasting and stone grinding industry for the cement factories, which served not only the town but also and more importantly the construction in the central and northern regions of Lao PDR. All these created smoke, dust and odours that affected the villages nearby. In addition, the growth of Vang Vieng town negatively affected water quality, especially the Xong River which runs through the town. Here, the town's waste water was drained to the river with very limited or no treatment at all. Villagers who lived downstream could no longer use the water from the river for home consumption, due to the deterioration of water quality. People also complained that fish became rare and some edible fresh water weeds vanished due to pollution. This contributed to less availability of food from natural resources. Noise pollution was caused by traffic, mountain blasting for stones and the cement industry, and late-night bars serving young backpackers. Some solid waste was dumped into the river and landfills. It is notable that the survey data showed that local people linked environmental problems to the urban-biased policy.

Environmental problems could decrease the quality of life and well-being of the people and threaten the tourism industry of Vang Vieng town. Hence, it is

recommended that environmental protection should be set as the first priority of the development strategies of Vang Vieng, particularly considering the fact that it has been promoted as a nature-based international tourist town. Environmental protection should expand beyond the urban space to cover the hinterland areas. Our study also indicates that the voices of the people should have more room in the local political spheres. Though perceptions are not necessarily a reality, they are the ways people interpret the world, human interaction and the surrounding environment. Listening to people's voices and scrutinizing their perceptions will help policy makers better serve the needs of the beneficiaries.

Acknowledgements

This article is an output from a research project entitled Impact of Urbanization on the Hinterlands and Local Responses in the Mekong Region: A study of Khon Kaen Thailand and Vang Vieng, Lao PDR, funded by the Swedish Government through the Swedish International Development Cooperation Agency (Sida) through the Sustainable Mekong Research Network (SUMERNET) programme for the benefit of developing countries. The authors acknowledge the support from the Center for Research on Plurality in the Mekong Region, Faculty of Humanities and Social Sciences, Khon Kaen University, and the Faculty of Social Science, National University of Laos. However, the views expressed and information contained in this article are not necessarily those of or endorsed by the Swedish government, Sida, or the entities managing the delivery of the SUMERNET, which can accept no responsibility for such views or information or for any reliance placed on them.

References

Allen A. Environmental planning and management of the peri-urban interface. Environment and Urbanization 2003; 1:135-47.

Cohen J. Statistical power analysis for the behavioral sciences. 2nd ed. Lawrence Erlbaum Associates, Hillsdale, NJ, USA. 1988.

Hoggart K. (ed). The city's hinterland: Dynamism and divergence in Europe's peri-urban territories. Ashgate, Hants. 2005.

Janmanee T, Thongyou M. Livelihood strategies of Thai peasants in becoming jewelry entrepreneurs. European Journal of Social Sciences 2012: 4: 633-40.

Kammeier HD. Rural urban sub-regional linkages in the Mekong Region: a holistic approach to development and poverty reduction. Asian Development Bank, Manila, Philippines. 2003.

Lao National Tourism Administration. Vang Vieng town and environs master plan, 2010 – 2020. Asian Development Bank, Manila, Philippines. 2009.

Ravets J, Fertner C, Nielson TS. The dynamics of peri-urbanization. *In:* Peri-urban futures: scenarios and models for land use change in Europe (Eds: Nilson K, Pauleit S, Bell S, Aalbers C, Nielsen T). Springer-Verlag, Berlin and Heidelberg, Germany. 2013; 13-44.

Simon D. Urban Environments: Issues on the peri-urban fringe. Annual Review of Environment and Resources 2008; 167-85.

UNDP. United Nations Population Division World Population Prospects: the 2010 Revision, World Urbanization Prospects, New York, USA. 2010.

Received 9 May 2013
Accepted 30 September 2013

Correspondent to
Maniemai Thongyou
Center for Research on Plurality in the Mekong Region,
Faculty of Humanities and Social Sciences,
Khon Kaen University,
Khon Kaen 40002,
Thailand
Tel: +668 1544 6722
Email: maniemai@gmail.com