

ECONOMIC DEVELOPMENT, URBANIZATION AND ENVIRONMENTAL CHANGES IN HO CHI MINH CITY, VIETNAM: RELATIONS AND POLICIES¹

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INTRODUCTION

In recent years, urbanization has been taking place rapidly and vigorously in Ho Chi Minh City (HCMC). As a reason of the implementation of *Doi moi* policy² in many fields, the economic growth of HCMC has amounted up to over 11% in almost every year for the past decade. A lot of industrial and export-processing zones as well as new residential areas were established, accelerating urbanization, economic transformation, and development of HCMC. The population has been also continually increasing, estimated to be over 7 millions persons³, with the annual growth rate 3.5% per year, of which migrants make up about a third. Due to the urban development history, the City population is not allocated equally all over the City. The population density in the inner City is over 30,000 persons per a square kilometer; whereas the density in suburban and rural areas of the City is much lower. The City area is 2,000 square kilometers, of which 104 km² is the inner City; 600 km² is the outskirts; and a large area is the rural. Establishment of new urban districts (from previous rural districts) since 1997 may be seen as a hallmark of the City's vigorous urbanization.

Reviewing the City's development for the past 10 years (1997 – 2007), we can see that urbanization has caused both positive and negative impacts on socio-economic, demographic and environmental fields in all different geographic areas of Ho Chi Minh City. This is shown through changes in land-use; agricultural land is transformed into industrial and residential land; farmers have become workers, business or service people. Previously rural lifestyles have been switching to the urban lifestyles. This paper presents outcomes of research on changes in various aspects, including: employment, income, children's education, housing, healthcare, service use, and entertainment. The hypothesis tested through the research was that urbanization is a process, which takes place differently in different districts of HCMC due to different socio-economic as well as environmental and demographic characteristics.

This research paper consists of 3 parts: the first part describes the research topic and methodology; the second one shows research findings in each site with a summary of research findings at the end; and the third one describes policy recommendations in order to make contributions towards solving the problems mentioned in the previous parts.

¹ This paper is one of the outcomes of the research project "Economic Development, Population Growth and Environmental Changes: Relations and Policies in Ho Chi Minh City, Vietnam" under the PRIPODE Program.

² The policy has transferred the planned economy to the market economy.

³ According to the mid-term census in October 01, 2004, the City population was around 6.2 millions persons

I. BACKGROUND AND METHODOLOGY

1. Research frame

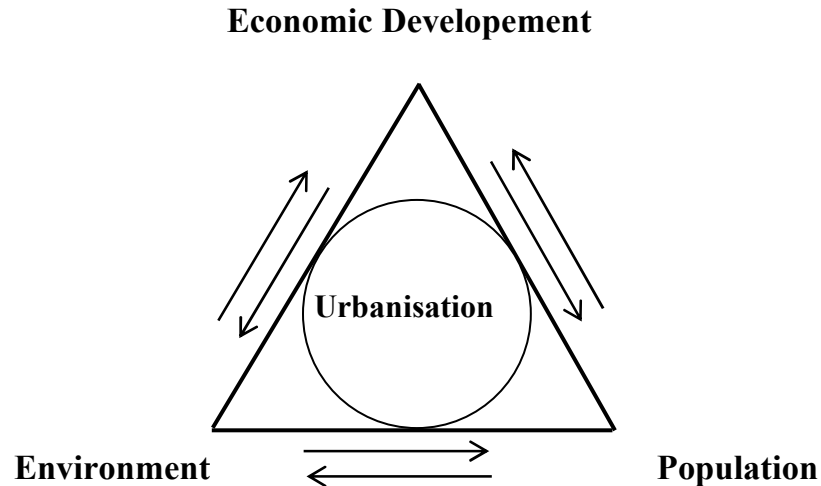
Urbanization is taking place in the context of (i) rapid economic development; (ii) important social changes in the City; (iii) a local government which lacks appropriate management measures; and (iv) people's behavior is changing spontaneously in order to adapt to the new situation. In the face of such challenges, the local government has made some efforts to take control over the situation, in order to stabilize people's life and achieve sustainable development for the City. Recently, urban planning has been viewed as an important tool for urban management policies.

Although, in the literature review, several researches to be conducted in both academic and policy making fields, have been published in the journals such as *Population and Environment* and *Environment and Urbanization*, there has been very few research on the relations between development, urbanization and environment in Vietnam. Due to the fact of fast urbanization has been happened in ten recent years. Previous research works mainly focused on a single field such as development, population or environment. In our research project, therefore, we focused on highlighting relations between rapid economic development, population growth, and environmental changes⁴ in the context of Ho Chi Minh City, where urbanization is taking place at a very high rate. Our research frame is based on a triangle, of which the three vertexes are environment, economic development, and population (*Figure 1*). In the center of the triangle, there is a circle symbolizing urbanization.

All these three fields have mutual influence on one another, resulting in positive or negative impacts according to specific development tendency in a local area. As described in the above-mentioned hypothesis, relations between these three fields and their impacts on local people vary from district to district in the City. Different stages of urbanization play an important role in identifying relations at different levels between economic development, urbanization, environmental deterioration, and socio-economic characteristics of residence communities.

Figure 1: PDE relations in the context of urbanisation

⁴ Relations between economic Development, Population growth, and Environmental changes should be called PDE relations.



2. Research sites

Ho Chi Minh City (*Figure 2*) consists of 24 urban and rural districts, among which 13 are inner districts; 6 are newly established urban districts, and 5 are suburban districts. They may be divided into 3 groups with different urbanization levels. The table 1 refers the group of districts, where urbanization has been taking place rapidly; the group of districts, where urbanization has been taking place at a medium speed; and the group of districts, where urbanization has been taking place slowly. In our research, we selected 3 districts, of which each is representative for one group for our survey, including: Go Vap District in the group of rapidly urbanized districts, Binh Tan District in the group of averagely urbanized districts, and District 2 in the group of slowly urbanized districts.

Figure 2: Administration map of Ho Chi Minh City

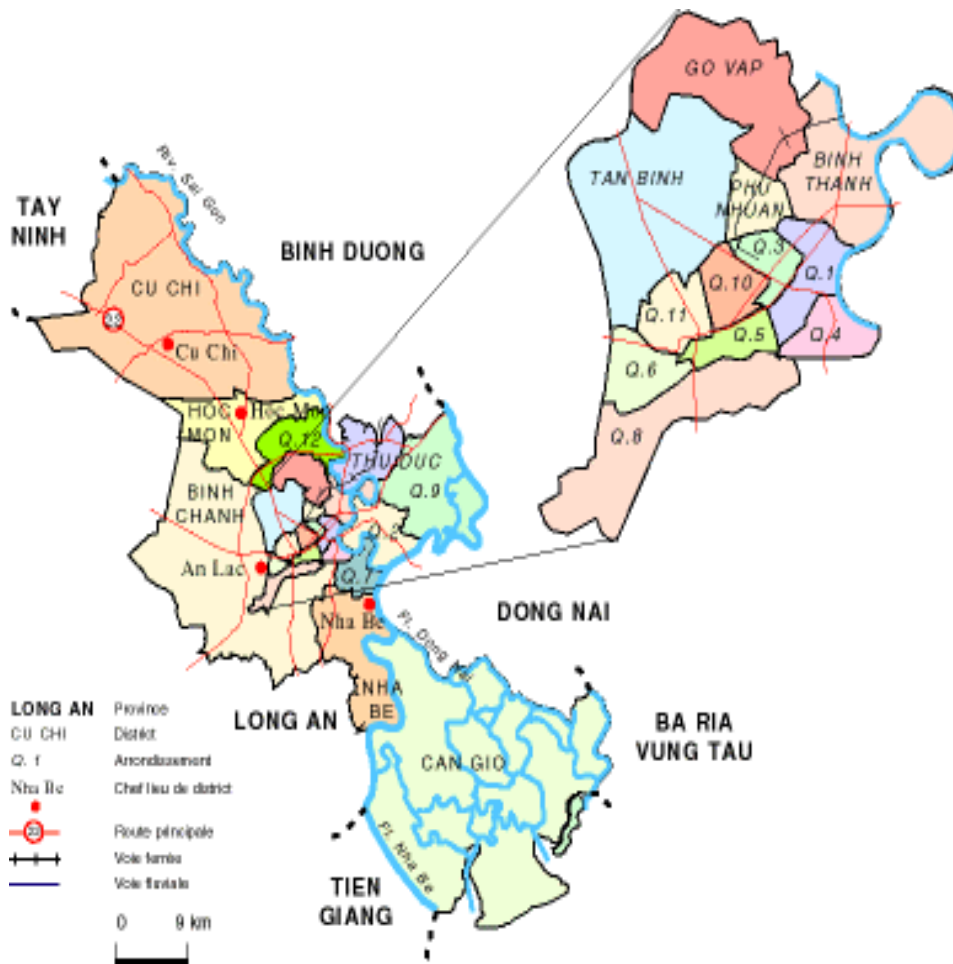


Table 1: Typology of districts

Categories	Rapid Urbanisation	Medium Urbanisation	Slow Urbanisation	Total
Urban Districts	1, 3, 4, 5, 6, 10, 11, Phu Nhuận, 8, Bình Thành, Gò Vấp , Tân Bình, Tân Phú			13
Semi-urban Districts		7,12, Bình Tân , Thủ Đức	2, 9	6
Rural districts			Cu Chi, Bình Chánh, Hóc Môn, Nhà Bè, Tân Phú	5
Total	13	4	7	24

Selection of these three districts was made, based on many criteria such as statistic data on economic growth and value (specifically, the local industrial development norms); development of urban services; the size and the rate of population growth; the proportion of migrant population; changes in the urban appearance (house building and establishment of

new residence areas); and especially discussions with local authorities on the awareness of the urbanization level in their local area. After selecting the three districts, we continued to do our preliminary survey and work with local authorities in order to come to the final selection of 3 wards within the selected districts for our research. Each selected ward is typical for the urbanization process of one of the three districts.

3. Research methods

In this research, we applied a number of different research methods. Firstly, we collected and analyzed economic, social and environmental data available at the City level and at the level of the research sites as well. As the information was so desultory we could not identify the relations between economic, social and environment sector in the process of urbanization. Secondly, we applied various environmental research techniques, collecting land, water and air samples from the research sites. The samples were then analyzed in a laboratory in order to measure the pollution levels. Thirdly, we carried out a sociological surveys at the household level, which is viewed as a synthetic approach combining all the three fields: economic, social, and environmental. The questionnaire consists of questions about changes of the household for a period of 5 years (1999-2004). Criteria for grouping research interviewees include: (1) residence status (permanent and migrant within the past 5 years); (2) standards of living (well-off, average, and poor); and (3) level of urbanization in the local area. The total number of households interviewed was 432. In addition to the household survey (quantitative), we also interviewed representatives of local governments at different levels (qualitative) in order to elucidate impacts caused by policies and their implementation in the areas, where urbanization has been taking place.

The project researchers were also divided into three teams. The first team consisted of economic experts; the second team consisted of natural environmental experts; and the third team consisted of social experts. At first, the three teams had a meeting in order to discuss and come to a common understanding about the research objectives and information in the questionnaire. Then, each team carried out its own activities with specific methods and collected specific information. Finally, data and information provided by each team were combined, filtered, and analyzed for the final report. Combination of different disciplinary experts made the research findings more diversified, more precise, and more scientific.

To understand socio-economic impacts on people's life in different geographic areas and measure the effect of the impacts (including also technical analyses of land, water, and air samples), we collected data and information from previous research works; and moreover, we carried out a sociological survey at the household level in selected sites and interviewed representatives of local governments at different levels.

To merge the various research findings, indicators were selected representing each field. The indicators were then review with respect to the correlation of the three fields in each district. In the economic development field, for example, the two indicators are employment and income; the indicators for the social field are education, healthcare, housing, quality of services, and security. Those for the demographic field are the proportion of migrants, time of migration, etc. Indicators for the environmental field are land, water and air pollution and people's attitude towards the environment. Next, we examined causes of existing problems. All these were analyzed and evaluated in the general context of urbanization with impacts of the State and City policies.

II. RESEARCH FINDINGS

1. Go Vap District

Go Vap District, located in the Northern belt of the inner City, is one of the districts, where urbanization has been taking place fastest, in the city. In 2004, its population was about 450,000 persons, of which migrants make up about 60%. The rate of population growth is relatively high, about 7% per year for the period from 1995 to 2004. The period, when the number of migrants moved to the District was the highest in the period 1995 – 1999. This is also when the urbanization took place rapidly. Duration of urbanization process is one of important factors for measuring the urbanization level.

Industrial production value, which is representative for economic development, regularly increased by year, making up 8.1% of total industrial production value of the whole City (of all 24 districts). The service sector, through which the level of urbanization is clearly shown, has attracted 65.5% of all labor of the District. The proportion of people, who changed their job during the past 5 years, is not high (around 11%). Of the three districts in our survey, Go Vap District also has the highest rate of official unemployment, which is 4.5%. Although there are more employment opportunities in the highly urbanized districts, jobs require higher qualifications and skills. Employment competition is also higher due to the higher level of urbanization. In terms of income for the past 5 years, the number of households, of which the income has been higher, account for 53.5% of all households. For laborers, 46.5% experienced an increase in income. The increase in income is one of the positive impacts of urbanization on the life of people in Go Vap District; it also plays a role in attracting migrants to this district.

Apart from positive impacts on employment and income, urbanization also causes impacts on social issues. In terms of education and training, 53% of households think that “socialization”⁵ of schools makes their children’s schooling “more convenient than before”; 63% of households think that learning conditions such as facilities, learning and teaching equipment, “have improved” compared with 5 years ago; 48.1% of people aged over 13 have taken part in vocational training in order to enhance their qualifications, aiming at meeting requirements for occupational diversification and specialization in the district. In terms of healthcare, the proportion of people, who buy medicines at the drug stores without the doctor’s prescription, has reduced to 61% (it used to be nearly 100% in the past). People have better conditions for medical examination and treatment. Urbanization also resulted in emergence of cultural types, such as Internet service, billiards, café, supermarket, and bookstores etc. The District’s cultural face has, consequently, changed a lot. It has been much more diversified, attracting participation of a great number of people from all sectors and age groups. Especially, entertainment types that were viewed by people as for those who had a lot of money, such as “to go to the theatre or the cinema” or “to go for a tour”, are relatively common now. 69.2% of households reveal that trading and services have been much more favorable and convenient than before. In terms of housing quality and living facilities, they have been also much better than 5 years ago. The proportion of households, who have a larger house, is 38.5%. The proportion of households, who have a house of a better quality, is 89.2%. Housing and urban services, yet, cannot keep pace with the population growth. Finally, 64% of people assume that the security in their residence areas has been improved.

⁵ Privatization

In the economic and social terms, urbanization has positive impacts on life of people; whereas, in the natural environmental terms, there is a deterioration that threatens local sustainable development and living quality of people. Regarding to water resource, the analysis of quality of water samples from the selected canals shows serious or extremely serious pollution. In the meanwhile, just 19% of households are aware of the fact that their water resource is polluted. Regarding to the land quality, the survey of land samples shows that the proportion of polluted substances still remains lower than the regulated standards of Vietnam. As industrial zones are developed and local people still have a bad habit of getting rid off waste and rubbish, however, the health of local people, especially poor ones living in slums, may be negatively influenced. Regarding to the air quality, 21% of households think the present air is more polluted, because of a considerable increase in construction works and transports.

2. Binh Tan District

Binh Tan District was established in 2003 in the Southwest of the City, after being separated from Binh Chanh District. It is typical for the districts, where urbanization has been taking place at a medium speed. In 2004, its population was about 400,000 persons, of which migrants make up about 80%. The period, when the number of migrants moving to the District to settle down is the highest, is 2000 – 2004 (5 years after that in Go Vap District). Although urbanization in this district has been taking place slower than that in the group of districts, for which Go Vap is typical, it is also relatively fast. The rate of population growth is about 15% for the period from 1999 to 2004.

In the economic terms: There was a quick transition from agricultural production into industrial production, resulting from the establishment of 2 industrial zones (Tan Tao and Pouchen). Industrial production value makes up 70% of the District's economic value. Economic development has caused a great impact on the District's labor structure. Along with the process of urbanization, the labor structure has also changed: the proportion of laborers in the agricultural sector has been decreased; whereas that in the industrial and service sectors has been increased. The number of laborers in the agricultural sector just makes up 2.2% of all working people. In the meanwhile, the corresponding figures in the industrial sector and the service sector are 46.5% and 51.3% of the total laborers respectively. For the past 5 years, the proportion of people who changed their job is 14.9%. This is the highest, compared with the two other districts in our survey. Establishment of the two industrial zones created a lot of employment opportunities for local people and also attracted laborers from other areas. As a result, the rate of unemployment in Binh Tan District is just 1.7%. In terms of income, 40% of households and nearly 29% of laborers reveal that their income is higher than 5 years ago. Thus, although urbanization has created a lot of jobs for people in Binh Tan District, it did not have a positive impact on their income compared to our findings in Go Vap district.

In terms of education and training, there have been certain changes in school facilities and teaching/learning equipment for children. These changes, however, are not as great as those in Go Vap District. Thus, the number of people, who think their children's schooling has improved, just makes up 45.8%; and the number of people, who think their children's learning conditions have become better, makes up 45.1%. The proportion of people aged over 13 and taking part in vocational training is 25%. This is rather low, although there are many industrial zones in this district.

In terms of healthcare, the proportion of people, who buy medicines at the drug stores without the doctor's prescription, is 83.7%; and, the proportion of people, who think the present conditions for medical examination and treatment have been better, is just 52.1%.

In terms of the cultural life, traditional cultural activities have been almost minimized; instead, there are new cultural types, such as Internet service, supermarket, bookstores, and karaoke etc. These new cultural services are attracting more and more people from all strata, all sectors and age groups. In terms of consumption and service use, people have better conditions for consumption; it is more convenient and easier to use services. It is, however, still worse than Go Vap District, as the level of development in Go Vap District is higher.

It is recorded that there was “a land fever” in this district. Many households quickly became much richer, due to selling their land. Since then, houses have been built and rebuilt turbulently in the residence areas. Local people have money to rebuild and improve their houses. 41.5% of households have “a larger house”; the proportion of households, who have a house of better quality, is 97.5%. The system of urban infrastructural works has been improved, giving a more spacious face for the district. Many of these infrastructure improvements have been overloaded, as the rate of population growth is too high. The fact that houses are beautiful, but roads are too bad results in a negative impression about the process of urbanization in this district. In terms of security, the proportion of local people, who assume that the security in their residence areas has been “worse than before”, is 12.6%.

As the population has been growing too fast, there is an environmental deterioration that worsens the living quality of people. 61% of households claim that their residence area has been frequently inundated, because houses are now preventing previous water outlets. In terms of pollution, our analyses show that pollution in this district is lower than that in Go Vap. Since it is located next to industrial zones, however, dust and noise cause negative influence on people’s living environment; thus, many households realize that the environment is really polluted. 54% of households think their water is polluted; and, 54% of households think the air is polluted.

3. District 2

District 2, located in the Northeast of the City, is typical for the districts, where urbanization has been taking place slowly. In terms of population, its population is lower than that of the two other districts. Its population is about 130,000 persons, of which migrants make up 42.2%. The period, when the number of migrants moving to the District to settle down is the highest, is 1995 – 1999. Yet, after this period, the flows of migrants to the district reduced; because the district’s economic development was not high. The rate of population growth is relatively modest (about 4.3%), compared with the two other districts.

In the economic terms: The district lacks big investment projects, since it is located rather separately and there is no “straight bridge” to the City center. There is, however, a transition in the labor structure, in which the proportion of laborers in the agricultural sector is falling down (just 5.4%); whereas that in the industrial and service sector is getting higher (35.4% and 59.2% respectively). The proportion of people, who changed their job, is 13.7%. The main tendency of job changing among local people in District 2 is that they stop doing agricultural work and start doing trading or service work. In terms of income, the proportion of households, of which the income is higher than 5 years ago, is 40.3% and the proportion of those, who have a higher income from their main job, is 36.5%.

In terms of education and training, the number of people, who think their children’s schooling has improved, makes up 44.7%; and the number of people, who think their children’s learning conditions have been better, makes up 50%. Due to the policy on provision of vocational training for people in the resettlement projects, the proportion of people aged over 13 and

taking part in vocational training in District 2 is the highest (77.8%), compared with the two other districts.

In terms of healthcare, the proportion of people, who think the present conditions for medical examination and treatment is better, is 62%. Yet, 100% of people keep buying medicines at the drug stores without the doctor's prescription, whenever they are sick/ill. The lifestyle and the opinion about healthcare among people in District 2 still remain the same.

Like other districts, urbanization has resulted in emergence of new cultural types, such as Internet service, supermarket, bookstores, and karaoke etc, which are attracting more and more people from all strata, all sectors and age groups. However, some entertainment activities such as "to go for a tour", "to go to the theatre" or "to go to the cinema" are done by just few people. 65% of people think conditions for consumption and service use have been more convenient and easier. In terms of housing quality and living facilities, 42.4% of people have a larger house and 93.1% of people have a better quality house. In terms of security, it has been better. Only 6.3% of people think the security in their residence area has been "worse than before".

In the environmental terms, water resources and land are less polluted, compared with the two other districts. Regarding to the air pollution, 22.5% of people think the air environment has been more polluted because of smoke, dust and noise.

In a district with slower urbanization like District 2, thus, urbanization hasn't yet resulted in a lot of changes in all aspects of the district, including the environmental and economic as well. Remarkably, the local government of District 2 has had positive impacts on people's life, particularly in vocational training and healthcare activities.

4. Summary

Economic development has resulted in population growth, especially due to flows of migrants into newly established districts of the City. Migrants contribute their parts towards economic development of the City for the past years. Economic growth improves people's standard of living, and vice versa improvement of people's standard of living has positive impacts on economic development. On the other hand, population growth makes the urban infrastructure overloaded. The deterioration of the urban infrastructure and environmental pollution in the area, where they used to be comparatively good, are the very limitations for long-term economic development.

Transition of the economic structure has caused a big substantial change of the employment structure. The number of laborers in the agricultural sector has been dropping down rapidly, as they have been switching to working in the industrial and service sector. A part of agricultural land has been switched to industrial and residential land. Yet, the dynamism in job changing is not high; usually, only young people have favorable conditions for changing their job. Old-age people are difficult to be trained in order to get a stable job. **The rate of unemployment is not really concerned with the income. Although the unemployment rate of Go Vap is highest 4.5% among these three districts, the proportions of the** of households and workers whose income have increased in 5 recent years successively 45.6 % and 53.3 %. The process of urbanization has brought one side, a requirement on job quality and the other side, a higher income.

Education is of great concern to households. People are satisfied with establishment of new districts and improvement of infrastructure, including also schools. A part of residents would like to have high-quality teaching and learning for their children; they therefore managed to

send their children to schools in the City center. In terms of healthcare, people still have the habit of buying medicines in the drug stores without “doctor’s prescription”, although new hospitals have been built. When they are seriously ill, they go straight to hospital; the hospitals in the City are therefore overloaded. In terms of the cultural life, a lot of traditional cultural festivals and activities have been replaced by entertainment activities such as Internet café, Café, Billiards, Supermarkets, and Bookstores etc. These new cultural activities are attracting participation of people from many strata and sectors. Daily consumption and other urban services have also developed, contributing a part towards switching their lifestyle from the rural one to the urban one. People’s private houses are more spacious and more beautiful. Changes in the areas of urbanization for the past 10 years, in general, seem to be semi-rural and semi-urban, although they took place at different levels.

Table 2: Key characteristics of the three research sites

Indicators		Gò Vấp	Bình Tân	District 2	Average
Economy					
Proportion of people working in the population of 13 years and over		58.8	54.0	54.4	56.3
Proportion of people unemployed in the population of 13 years and over		4.5	1.7	2.5	2.9
Structure of employment	Agriculture	6.1	2.2	5.4	4.5
	Industry	28.4	46.5	35.4	37.1
	Services	65.5	51.3	59.2	58.4
Proportion of households whose income has increased in 5 recent years		45.6	28.6	36.5	36.7
Proportion of workers that their income has increased in 5 recent years		53.5	39.9	40.3	44.5
Population					
Increase rate of the population per year (1999-2004) (1)		7.1	14.6 (*)	4.3	8.6
Period having most migrants		1995-99	2000-04	1995-99	
Proportion of migrants (1)		59,6	79,8	42,2	
Proportion of unqualified workers		52,1	79,1	73,4	68,6
Social Aspects					
Better conditions in going to school		59,4	45,8	44,7	49,5
Better educational conditions (equipment)		62,7	45,1	50,0	52,0
Proportion of people participating in professional training		48,1	25,0	77,8	50,4
Better health care (**)		55,5	52,1	61,8	56,5
Self-treating (**)		61,3	83,7	100,0	81,7
Better trade and services conditions (**)		69,2	65,3	65,0	66,5
Better housing conditions (**)		38,5	36,8	42,4	39,2
Better security conditions (**)		9,7	12,6	6,3	9,5
Environment					
Proportion of houses flooded (on a regular basis)		38,5	61,1	34,7	44,8
Proportion of households satisfied on hygiene of their residential sites		64,6	46,8	58,0	56,5

Degradation of water quality	18,8	44,7	66,7	43,4
Degradation of air quality	21,0	54,5	22,5	32,7

Note: All indicators are presented in %.

() Increase rate of Binh Chánh, including Binh Tân at that period.*

*(**) Proportion of people stating*

(1) Source: Statistics of HCMC.

In environmental terms, the professional analyses of environmental elements such as land, water and air quality show that the higher the level of urbanization is, the more serious the environmental pollution will be. For example, sources for surface water disappeared due to land filling; underground water is polluted and salted. Land is also polluted partly due to industrial production and partly due to people's behavior in waste processing. Dust and noise pollution, resulted from industrial production, transportation, and people's entertainment activities such as Karaoke, Radio etc, tends to threaten people's living quality. These are negative aspects of urbanization. If they are not noticed and properly solved, they will result in extremely serious consequences and cause negative impacts on the City's urban sustainable development.

In conclusion, in a big city like Ho Chi Minh City, urbanization is not taking place identically everywhere. Relations between economic, social and environmental fields are not taking place as a linear process, but they depend a lot on other factors. Based on the findings of our research, we can see that in addition to objective interactions between relevant factors of urbanization such as economic, social and environmental, there are also linkages between other subjective factors such as people's awareness and local management. In terms of people's awareness, we can see that people in urbanizing areas are usually aware of only short-term problems (such as smoke, dust, and noise related to the environmental pollution), but they cannot see long-term problems with underlying reasons. Thus, opinions and comments provided by residents in the questionnaires should be combined with a lot of other information, in order to get a precise insight into the process of urbanization in the City. In reality, local governments play an important role in causing impacts (positive or negative) on socio-economic fields. Appropriate development policies are, therefore, very necessary for urbanizing areas.

III. Some policy recommendations for sustainable development

The most basic concern in all policies is how to speed up economic development together with environmental protection in urbanizing areas. It is, therefore, necessary to limit economic development which potentially causes pollution. Apart from the existing documents of regulations for environmental protection (that must be implemented more strictly), some specific policy recommendations can be proposed as below:

1. Credit policy

Most of investors are now relying on the banking system to get loans for their investment. If the City government has an agreement with the banking system about which sectors/production take priority in borrowing funding, pollution can be limited. When reviewing and approving of projects that borrow a credit loan, the banking system should give priority for clean projects, such as the project of growing clean vegetable, or growing orchid, because such projects not only create new jobs, but also help people to change their job. A

credit policy that encourages investments into sectors, which do not cause pollution, should be implemented. A credit policy also helps to make decision about investment locations through preferential interest rates for specific locations. Investments should be made preferentially into areas, where urbanization is slow. This will help to reduce the density of trading/production units in some other areas. The credit policy also accelerates the economic structural transition, switching from production sectors to service sectors in order to minimize sources of pollution.

2. Science-technology disseminating policy

In addition to the credit policy, it is also necessary to encourage dissemination of science and technology to investors so that they and residents realize what production activities they should carry out in order not to cause pollution. This policy plays an important role in training and changing occupations for laborers. It also helps to create a high-quality human resource, including policy-makers and economic development planners; as the result, they will know how to combine economic development and environmental protection for sustainable ecological urban economic development.

3. Urban planning policy

The economic development and urbanization in Ho Chi Minh City illustrate that urban planning plays a very important role in setting up development orientations. One of the basic reasons for the disordered urbanization in the City for the past few years is the lack of specific urban planning. People, investors as well as local governments do not know exactly what the function of a specific land will be. On the contrary, those, who have power and money, can change the allocation making it advantageous for them.

Planning should regulate where it is appropriate to have certain functions located. Where to have waste disposal sites, where it is appropriate to have water outlets in order to avoid inundation; where is suitable to build industrial zones so that wind does not blow from the industrial zones to residence areas; where it is necessary to have green areas, etc. Planning should be focus on how to improve the living quality of people. Besides, urban planning should take into account many other factors such as infrastructure and relevant works, making it favorable for development of an area, where urbanization is taking place. Although District 2 is near the City center and there was a plan for its development, urbanization still remains low. The reason for this is the lack of infrastructure and appropriate investments.

In addition, policy makers also need to take into account specific socio-economic characteristics in each local area in order to make new and specific policies for urbanizing areas (which should be different from policies for districts already urbanized).

However, our research shows that it is necessary to not only emphasize on policy making, but also management and implementation of existing policies and regulations. For example, a lot of impermissible houses were built. The reason is partly because the local government did not have sufficient concern and partly because resources and capacity of local governments are still limited. Many local governments are not yet used to undertake management over a ward (which used to be a commune) with a larger population. It is, therefore, necessary to enhance the local human resource and improve the management capacity of local officials in urbanizing areas. Furthermore, it is sometimes necessary to have coercive measures, when a production/trading unit violates regulations for environmental protection. It is also necessary to apply other indirect tools such as economic measures, including penalties that a production/trading units have to pay, whenever it causes pollution. The principle for this is

“those, who cause pollution, have to pay expenses”. Finally, it is the most important that people’s consciousness of executing laws and together protecting the environment should be improved.

4. Specific policy recommendations for each urbanizing area

For Go Vap District, where the level of urbanization has been high, it is important to make investments (credit loans) for groups of people, who have difficulty in economic conditions. People need opportunities for development and integration with urban life.

For Binh Tan District, where urbanization is taking place relatively rapidly, it is most important to improve urban management work and implementation of policies and law.

For District 2, it is necessary to have big investments into infrastructure building and connection the district with the City center.

CONCLUSION

Our research objective is to identify relations between economic development, population growth and environmental changes in Ho Chi Minh City. Urbanization has clearly caused impacts on the City economic structure, especially in urbanizing areas. There are positive changes in many social aspects. There is also environmental deterioration and pollution. The initial hypothesis on areas at different levels of urbanization cannot reflect fully the relations between the three fields correspondingly to the levels of urbanization. There are many other factors involved, such as public policy, local management, and specific socio-economic characteristics of local areas. Thus, it is necessary to have particular policies to be implemented in urbanizing areas, in addition to common policies.

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