

IMPACT OF LAND USE PLANNING ON SOCIO-ECONOMIC DEVELOPMENT OF PHO YEN TOWN, THAI NGUYEN PROVINCE

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Abstract

Socio-economic development of a locality is influenced by many factors, in which land management, especially land use planning is the leading factor and strongly affects all aspects of the economic and social development. To see that impact clearly, a study from 2019 - 2020 in Pho Yen town, Thai Nguyen province used sociological survey method to survey 3 regions of the town with different land users. The research results show that: The level of influence of land use planning on the process of Urbanization and industrialization and the process of infrastructure development is the highest, with the evaluation results reaching the index 3.68 – 4.02 in all 3 regions. Social development indicators such as People's income and living standards, Increasing employment opportunities and Reducing poverty rate are influenced by land use planning at a moderate level. From these evaluation results, it is necessary to have solutions to strengthen land use planning, especially to develop highly feasible plans to better support the process of socio-economic development.

Keywords: *Influence of planning, Socio-economic indicators, Land use planning, Pho Yen*

1. Introduction

Pho Yen town was formed from Pho Yen district of Thai Nguyen province according to Resolution No. 932/NQ-UBTVQH13 dated May 15, 2015 of the National Assembly Standing Committee and was recognized as a grade III city under Decision No. 530/QD-BXD dated June 17, 2019 of the Ministry of Construction.

Pho Yen is a town in Thai Nguyen province, 26 km south of Thai Nguyen city and 55 km north of Hanoi capital. It is one of the gateways of Hanoi capital to the northeastern provinces of Vietnam. The total area of the town is 25,888.69 ha, including 4 wards and 14 communes. Total population in 2019 is 197,088 people.

Since the town's establishment up to now, the economic growth rate and social innovation have made strong development steps. Total production value from 579.1 trillion VND in 2015 to 886.0 trillion VND in 2019. The economic growth rate of the town in the period 2015 - 2019 is very high, from 26.7% in 2015 to 35.2% in 2019.

Socio-economic development is influenced by many factors. External factors are the status and trends of socio-economic development of countries not only in the region but also in the world. The internal factors include: The country's strategic development orientation, the development plan for each year and period, domestic resources, general management policies and sectors.... In which, the activities of land management are considered to be very important. Land management directly affects the socio-economic development of Pho Yen, in which land use planning is the leading factor and has a strong impact on all aspects of economy and society.

To see that impact clearly, a study from 2019 - 2020 used the sociological survey method to survey 3 regions of the town with different land users. The research results will be a database to help policy makers come up with optimal solutions for the socio-economic development of Pho Yen.

2. Method

2.1. Expert surveys and sociological surveys

2.1.1. Survey of experts

- The topic surveyed the opinions of 31 experts, including 21 managers from the town level, departments of the town, People's Committees of communes and wards and 10 scientists on environmental resource management, economic management.

- Survey method: Direct interview according to predefined questions with survey content: Comment on socio-economic development criteria. By giving points in the questionnaire. Survey of experts on the assessment of socio-economic development of the town, as follows:

Rating: 1: Very little important; 2: Less important; 3: Relatively important; 4: Important; 5: Very important

No	In your opinion, to evaluate the socio-economic development of the town, which of the following criteria are used?	Rating level				
		1	2	3	4	5
1	Urbanization and industrialization					
2	Infrastructure development					
3	Attract investment					
4	Formation and development of the real estate market					
5	People's income and standard of living					
6	Increase job opportunities					
7	Reduce poverty rate					
8	Exercising equal rights					

2.1.2. Sociological Investigation

- The basis for selecting the survey sample:

- Criteria for selecting survey households/organizations are classified into 3 regions as follows:

+ Region 1 (Central region): This place has the economic, cultural and political centers of the town. In this region, the economy develops strongly and stably. Region 1 includes 4 wards, choosing 3 wards are Ba Hang, Bai Bong and Dong Tien.

+ Region 2 (sub-central area): is the development planning area. Currently, this place is developing at a moderate rate. According to the planning, this is the area with many key investment projects to develop the economic zone of Pho Yen. This area consists mainly of communes located in Diem Thuy and Sam Sung industrial zones. Select 3 communes: Hong Tien, Trung Thanh and Tien Phong.

+ Region 3 (Suburban area): is an area of socio-economic development in the direction of agriculture and ecology. This region selects 3 communes: Thanh Cong, Tan Phu and Phuc Thuan.

- Number of survey samples:

+ Each commune and ward selects 3 typical villages/groups representing the locality, the total number of households/organizations of 27 villages/groups of 9 communes/wards is 1,350 households/organization.

+ Number of survey samples: According to Slovin (1960; cited by Vo Thi Thanh Loc, 2010), the sample size is determined according to the following formula:

$$n = \frac{N}{1 + N.e^2}$$

Inside:

n: Survey sample capacity

N: Total number of households/organizations located in the survey area; n: number of representative households/organizations

e: 95% confidence level (Tolerable error, usually 0.05)

Applying Slovin's formula, from the number of 1,350 households of 27 villages/organizations of 9 communes and wards, the total number of samples to be investigated is 308,5714. Rounded up is 309 samples – 309 questionnaires.

On the basis of the number of samples to be surveyed as determined above, 103 households/organizations were selected for each region by the stratified random sampling

method. Each region surveyed 6 economic organizations, 6 other organizations and 91 individual households.

The content of the questionnaire is as follows:

What is the impact of land use planning on socio-economic development of Pho Yen town?

Rating: 1: Totally disagree; 2: Disagree; 3: Can agree or disagree; 4: Agree; 5: Totally agree

Do you agree with the questions below?	Rating level				
	1	2	3	4	5
1. Is the land use planning an important basis?					
2. Is the land use plan built in the spirit of democracy?					
3. Is the construction land use planning valid?					
4. Are the land use planning and land use plans realistic?					
5. Is the land use planning done according to the annual plan?					
6. Has the land use plan been adjusted appropriately over time?					
7. Are the order and procedures for land use planning well conducted?					
8. Is the performance of land use planning at a good level?					

2.2. Methods of data processing and evaluation of research results

- The research data is processed with mathematical statistics on the software: SPSS and Excel.

- Using SPSS software in analyzing sociological survey data of Hoang Trong and Chu Nguyen Mong Ngoc (2007). Specifically, the application of IBM SPSS Statistics 20 software for analyzing sociological survey data. Applied to analysis of survey data from 309 questionnaires according to Likert scale to evaluate research results (Do Anh Tai, 2008).

- Rate according to 5-level Likert scale:

1: Totally disagree/very small/very low;

2: Disagree/small/low;

3: Confused/average;

4: Agree/big/high;

5: Totally agree/very large/very high.

- From the Likert scale, the specific rating hierarchy for 5 levels is as follows:

1.00 - 1.79: Very low

1.80 - 2.59: Low

2.60 - 3.39: Average/Medium

3.40 - 4.19: High

4.20 - 5.00: Very high.

3. Results

3.1. Evaluation of socio-economic development indicators of Pho Yen town

From the results of in-depth interviews with experts who are managers and scientists together with discussions to come to conclusions about socio-economic development indicators that are influenced by land management in Pho Yen town.

The data (Table 01) shows that there are 8 main indicators affected. The rating level is from high to very high, 3.39 – 4.39. In which, 6 indicators are highly evaluated, reaching the index 4.23 - 4.39. The other two indicators, namely the formation and development of the real estate market and the exercise of equal rights, are only rated at a medium to high level, 3.39 -3.48.

Thus, there are 6 important criteria selected for evaluation in Pho Yen town: Urbanization and industrialization, infrastructure development, investment attraction, income and living standards of the people, increase employment opportunities and reduce poverty.

Table 01: Summary of expert assessment results on socio-economic development indicators influenced by land management in Pho Yen town

No	Content of Land Management	Assessment	Standard Deviation
1	Urbanization and industrialization	4.36	0.80
2	Infrastructure development	4.39	0.62
3	Attract investment	4.32	0.70
4	Formation and development of the real estate market	3.48	0.68
5	People's income and standard of living	4.23	0.56
6	Increase job opportunities	4.29	0.64
7	Reduce poverty rate	4.23	0.56
8	Exercising equal rights	3.39	0.67

On the basis of expert survey results, the study conducted 309 questionnaires to assess socio-economic development indicators of Pho Yen town. The evaluation results in Table 02 show that:

- In the three contents of each socio-economic development indicator, it is generally assessed with an index from 3.38 to 4.14, reaching the average to high level.

- There are 5 socio-economic development indicators that are highly appreciated, reaching index 3.62 – 4.14. The poverty rate reduction target only reached an average of 3.38, but the index is in the upper bound of the average.

In summary, all six socio-economic development indicators of Pho Yen town are good performance aspects since the town's establishment until now.

Table 02: Evaluation of socio-economic development indicators of Pho Yen town

No	Indicators of socio-economic development	Assessment	Standard Deviation
1	Urbanization and Industrialization (Overall Average)	4.14	0.46
1.1	The process of urbanization and industrialization is concerned	4.16	0.60
1.2	The order and procedures for implementing the process of urbanization and industrialization are appropriate	4.13	0.58
1.3	Good results of the process of urbanization and industrialization	4.15	0.61
2	Infrastructure Development (Overall Average)	4.12	0.44
2.1	Infrastructure development is an important task	4.16	0.59
2.2	The order and procedures for implementing appropriate infrastructure development	4.12	0.58
2.3	Good infrastructure development performance results	4.07	0.58
3	Attracting investment capital (Overall average)	3.74	0.39
3.1	Attracting investment capital for development is an important task	3.81	0.59
3.2	Order and procedures for attracting investment capital for appropriate development	3.76	0.57
3.3	Good performance in attracting investment capital for development	3.65	0.59
4	People's income and standard of living (General average)	3.86	0.46
4.1	Developing people's income and living standards is important	3.80	0.64
4.2	The order and procedures for increasing income and living standards of the people are appropriate	3.89	0.62
4.3	The results of the implementation of increasing people's income and living standards are good	3.90	0.62
5	Increased job opportunities (Overall Average)	3.62	0.38
5.1	Increasing job opportunities is an important policy for social development	3.59	0.55
5.2	The order and procedures of implementation increase suitable job opportunities	3.63	0.59
5.3	The results of the implementation of the policy of increasing good job opportunities	3.63	0.55
6	Reducing poverty rate (Overall average)	3.38	0.51
6.1	Reducing the poverty rate in the society is of concern	3.37	0.56
6.2	The order and procedures for implementing poverty reduction are appropriate	3.38	0.58
6.3	Good results of poverty reduction	3.38	0.59

3.2. Evaluation of the implementation of land use planning in Pho Yen town

The data on the implementation of land use planning in Pho Yen town with 8 contents in Table 03 shows that:

- All 8 contents of the land use planning of Pho Yen town are highly appreciated, at 3.44 - 4.00 and the average index is 3.68.

- Out of 8 items rated at high level, content 8 is that the land use plan is feasible but the index is only 3.44, which is a high level but the lower limit of the high rating.

In summary, in general, the implementation of land use planning in Pho Yen town is quite good and there are many innovations in this work. This evaluation result is also consistent with the study of Vu Thi Kim Hao et al. (2020).

Table 03: Evaluation of the implementation of land use planning in Pho Yen town

No	Evaluate content	Assessment	Standard Deviation
1	The land use plan is built on a full basis	3.48	0.71
2	The land use plan is built in the spirit of democracy	3.64	0.65
3	The land use master plan and land use plan are realistic	3.63	0.66
4	The land use plan is made according to the annual plan	3.82	0.58
5	The land use plan is adjusted appropriately over time	4.00	0.56
6	The order and procedures for land use planning are well conducted	3.87	0.53
7	The performance of land use planning is at a good level	3.57	0.69
8	The land use plan is feasible	3.44	0.77
Overall Average		3.68	0.33

3.3. The influence of land use planning on socio-economic development of Pho Yen town

To evaluate the influence of land use planning on socio-economic development of Pho Yen town, IBM SPSS Statistics 20 software supported the analysis of 309 questionnaires in 3 regions with 4 land users. The analysis results are aggregated by 3 regions and by 4 land users.

3.3.1. Evaluate by region

The results of assessing the impact of land use planning on socio-economic development of Pho Yen town in Table 04 show that:

Table 04: Impact of land use planning on socio-economic development of Pho Yen town by region

No	Indicators of socio-economic development	Region 1		Region 2		Region 3	
		Assessment	Standard Deviation	Assessment	Standard Deviation	Assessment	Standard Deviation
1	Urbanization and industrialization	4.02	0.30	3.94	0.24	3.87	0.27
2	Infrastructure development	3.82	0.31	3.76	0.32	3.68	0.28
3	Attract investment	3.41	0.50	3.36	0.49	3.30	0.46
4	People's income and standard of living	3.33	0.40	3.35	0.40	3.32	0.40
5	Increase job opportunities	3.33	0.38	3.32	0.37	3.29	0.36
6	Reduce poverty rate	3.38	0.36	3.38	0.35	3.37	0.35

- Land use planning affects 6 socio-economic development indicators in all 3 regions with an index from 3.32 to 4.02, an average to high rating.

- In region 1, there are 3 indicators of urbanization and industrialization, infrastructure development and investment attraction, reaching a high level, the index is from 3.41 to 4.02. While the other three indicators are income and living standards of the people, increase in employment opportunities and reduce the poverty rate, they are only assessed at an average level, reaching the index of 3.33 - 3.38.

- In region 2, there are 2 indicators, namely urbanization and industrialization and infrastructure development, reaching a high level, the index is from 3.76 to 3.94. While the other four indicators are attracting investment capital, income and living standards of the people, increasing employment opportunities and reducing the poverty rate, they are only assessed at an average level, reaching the index of 3.32 - 3.38.

- In region 3, there are only 2 indicators of urbanization and industrialization and infrastructure development reaching a high level, the index is from 3.68 to 3.87. While the other four indicators are attracting investment capital, income and living standards of the people, increasing employment opportunities and reducing poverty rate, they are only assessed at an average level, reaching the index of 3.30 - 3.37.

In summary: From a detailed assessment of the contents of land use planning that affect the socio-economic development of Pho Yen town by region, the topic is summarized and ranked in Table 05 for each region:

- The degree of influence of land use planning on the process of urbanization and industrialization and the development of infrastructure is the strongest, followed by quite strong on the attraction of investment capital. .

- Socio-economic development indicators such as income and living standards of the people, increase of employment opportunities and reduction of poverty rate are affected to an average extent by land use planning.

- The degree of influence of land use planning on socio-economic development of Pho Yen town also decreases gradually from region 1 to region 2 and 3.

Table 05: Ranking of the influence of land use planning on socio-economic development of Pho Yen town by region

No	Indicators of socio-economic development	Region 1	Region 2	Region 3
1	Urbanization and industrialization	H	H	H
2	Infrastructure development	H	H	H
3	Attract investment	H	M	M
4	People's income and standard of living	M	M	M
5	Increase job opportunities	M	M	M
6	Reduce poverty rate	M	M	M

Note: H: high; M: medium

3.3.2. Assessment by land users

In addition to assessing the influence of land use planning on socio-economic development of Pho Yen town according to 3 regions, the study also assesses by land users.

Summary data on the influence of land use planning on socio-economic development of Pho Yen town by land users in Table 06 gives comments:

- All 4 land users show that land use planning affects 6 socio-economic development indicators with the index from 3.22 to 4.22, the assessment is medium to high and very high.

- All 4 land users show that land use planning strongly influences 2 socio-economic development indicators, namely Urbanization and industrialization and Infrastructure development with the index from 3.57 to 4.22.

- Land use planning has an average influence on 3 indicators of attracting investment capital, income and living standards of the people and increasing employment opportunities in all 4 land users.

Table 06: Impact of land use planning on socio-economic development of Pho Yen town by land users

No	Indicators of socio-economic development	Agricultural household		Non-agricultural households		Economic organizations		Other organizations	
		Assess-ment	Standard Deviation	Assess-ment	Standard Deviation	Assess-ment	Standard Deviation	Assess-ment	Standard Deviation
1	Urbanization and industrialization	3.90	0.27	3.93	0.25	4.22	0.20	4.22	0.29
2	Infrastructure development	3.77	0.29	3.57	0.29	3.85	0.29	4.01	0.37
3	Attract investment	3.32	0.29	3.34	0.51	3.38	0.18	3.85	0.23
4	People's income and standard of living	3.34	0.41	3.32	0.42	3.26	0.29	3.28	0.20
5	Increase job opportunities	3.32	0.39	3.33	0.36	3.22	0.17	3.27	0.20
6	Reduce poverty rate	3.38	0.37	3.40	0.36	3.33	0.24	3.38	0.17

In summary: From detailed analysis of the influence of land use planning on socio-economic development of Pho Yen town by each land user, the topic is summarized and ranked in Table 07:

- The degree of influence of land use planning on the process of urbanization and industrialization and the development of infrastructure is the strongest, followed by quite strong on the attraction of investment capital.

- Socio-economic development indicators such as income and living standards of the people, increase of employment opportunities and reduction of poverty rate are affected to an average extent by land use planning.

Table 07: Ranking of the influence of land use planning on socio-economic development of Pho Yen town by land users

No	Indicators of socio-economic development	Agricultural household	Non-agricultural households	Economic organizations	Other organizations
1	Urbanization and industrialization	H	H	H	VH
2	Infrastructure development	H	H	H	H
3	Attract investment	M	M	M	H
4	People's income and standard of living	M	M	M	M
5	Increase job opportunities	M	M	M	M
6	Reduce poverty rate	M	H	M	M

Note: VH: very high; H: high; M: medium

4. Discussion and Conclusion

- The results of an expert survey on socio-economic development indicators influenced by land management in Pho Yen town have concluded that there are 6 important indicators, which are: Urbanization and industrialization. industrialization; infrastructure development; attract investment; income and living standards of the people; increase employment opportunities and reduce poverty. These are also the main and key socio-economic development development indicators that the State has included in the current national development strategy. Of these six indicators, the first three are about economic development and the last three are about the development of social stability.

- Evaluating the implementation of land use planning in Pho Yen town, the conclusion was drawn: All 8 contents of land use planning in Pho Yen town are highly appreciated, at 3.44 – 4.00 and the overall average is 3.68. Out of the 8 items rated at a high level, the Land Use Plan is feasible but the index is only 3.44, which is a high level but the lower limit of the high rating. This shows that the land use planning, especially the planning, still has many aspects, requiring solutions to overcome. However, in general, the implementation of land use planning in Pho Yen town is quite good and there are many innovations in this work.

- The influence of land use planning on 6 socio-economic development indicators of Pho Yen town:

+ The degree of influence of land use planning on the process of urbanization and industrialization and the process of infrastructure development is the strongest, followed by quite strong on the attraction of investment capital , with the evaluation results reaching the index of 3.68 - 4.02 in all 3 regions. The results of this assessment clearly show that in the process of urbanization and industrialization and the development of infrastructure of a locality, a feasible land use plan is required. That will accelerate the progress of local development.

+ Socio-economic development indicators such as People's income and living standards, Increasing employment opportunities and Reducing poverty rate are influenced by land use planning at an average level. This assessment result is also consistent with reality, which is in land management, land allocation, land lease, and issuance of land use right certificates; Land acquisition, compensation, support and resettlement are the factors that strongly influence the above indicators.

+ The degree of influence of land use planning on socio-economic development of Pho Yen town also decreases gradually from region 1 to region 2 and 3. This is also easy to explain because region 1 is the central area, is the area with the economic, cultural and political centers of the town. In this region, the economy develops strongly and stably.

Regions 2 and 3 are both far from the center, especially region 3, which is a suburb, an area of socio-economic development in the direction of agriculture and ecology.

+ The influence of land use planning on socio-economic development of Pho Yen town according to land users: All 4 land users show that land use planning affects 6 indicators of socio-economic development with the index from 3.22 to 4.22, the assessment is medium to high and very high. All four land users show that land use planning has a strong influence on two socio-economic development indicators, namely Urbanization and industrialization and Infrastructure development with the same index. 3.57 – 4.22.

From the above evaluation results, it is necessary to have solutions to strengthen land use planning, especially to develop highly feasible plans. This will well support the socio-economic development of a locality.

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