

# **THE IMPACT OF INDUSTRIAL ZONE INVESTMENT AND DEVELOPMENT ON THE LAND LOSS PEOPLE'S INCOMES**

## **A CASE STUDY IN THAI NGUYEN PROVINCE, VIET NAM**

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### **Abstract**

*This article is aimed at analyzing the impact of investment and development activities in industrial zones on the land loss people's incomes. The research was conducted in Thai Nguyen province, Vietnam. In this study, the researchers utilized questionnaires as the main data collection instrument. Findings were coded and analyzed using OLS method with the help of SPSS 20. The research findings have shown that the industrial zone investment and development had both positive and negatives effects on the land loss people's incomes. The authors have, thereby, proposed some recommendations, on the one hand, in order to enhance the positive sides of the situation to the land loss people; on the other hand, to limit the drawbacks of this issues.*

*Keywords: Industrial zones, investment and development, income, land loss people*

### **INTRODUCTION**

Investing and developing in industrial zones is an effective way to attract invested capital, which contributes to the socioeconomic development in local areas in particular, and the whole country in general. Attracting investment in infrastructure construction, and production and business development in industrial zones will have inevitable impacts on the land loss people's incomes.

In addition, one fact is that a large amount of agriculture and residential land must be withdrawn in order to construct industrial zones. According to data from the Ministry of Agriculture and Rural Development, on average 73 thousand hectares of agricultural land is withdrawn each year, which has impacted the lives of 2.5 million people, and for every 1 ha of land withdrawn, 10 people would be jobless (Nguyen Quoc Nghi et. al., 2012). Thai Nguyen province is also in the same situation. With 6 industrial zones planned and built, the total land area withdrawn from people is approximately 1,420 hectares, the majority of which is agricultural land. As a result, a large number of employees working in this field will have to switch their jobs. Households must transform their livelihoods (Management board of industrial zones in Thai Nguyen, 2015)

The influence mechanism of the investment and development activities in industrial zones on the land loss people's incomes can be understood as follows:

First, the investment and development of industrial zones will lead to withdrawing land from people. Those people will, in turns, receive a sum of money as compensation from their land loss. This compensation may help those people make a change for their livelihoods, which, thereby, affects their incomes.

Second, when industrial zones come into operation, a number of businesses will be attracted to invest in those areas. This would offer plenty of job opportunities (in direct and indirect ways) both within and outside the industry zones, and, thereby, affect the incomes of the people

The study was conducted to examine the impact of investment and development of industrial zones to the land loss people's incomes via two aspects above. From that basis, the researchers have proposed some recommendations to improve the positive effects and minimize the negative impacts of the investment and development of industrial zones on land loss people's incomes.

## **LITERATURE REVIEW**

Many researchers including Tran Quang Tuyen (2013), Doan Thi Binh (2011), Nguyen Quoc Nghi (2012), Le Du Phong (2007), etc, have studied the livelihood planning for the land loss people in the process of urbanization and construction of industrial zones. This study has determined the status of households' incomes after land loss, people's employment, and analyzed the factors affecting the livelihoods of landless people. The selected factors for analysis share considerable similarities among studies, such as education level, number of employees, gender of household head, agricultural land area, participation in social organizations of members in the household, access to credit sources, etc. The researcher Le Du Phong (2007) has drawn, in his findings, statistical conclusions from all localities in Vietnam

about the change of incomes, jobs, the ways people utilize the compensation due to their land loss for the construction of industrial zones, or urbanization. However, those studies have not quantified the relationship between factors affecting people's incomes.

The author Tran Quang Tuyen (2013) in his study has quantified the relationship between factors affecting the incomes of the people. The data were collected from 447 land loss households in the outskirts of Hanoi. Simultaneously, the author divided household incomes into agricultural earnings, business income, income from paying jobs requiring low qualifications, low skills, income from jobs requiring high skill level, and non-labor income. Factors affecting the income of the people are the area of their land, the number of members in the household, gender of household head, household head's age, the average age of the labor force in the family, the average education level of the family members.

With regard to another impact of the loss on the livelihoods of people living around industrial areas, Saumik Paul et. al (2013) in their study considered people's satisfaction with the infrastructure of industrial parks, and the impact of infrastructure development on the lives of the people in India. The least squares method was used to evaluate the impact of factors on the livelihoods of land loss people. The data collected from interviewing 1017 households uncovered that 462 households were affected by the construction of industrial parks and displaced; 168 families gave up their farmland to make way for resettlement of land loss people; and 387 households were not affected by land loss for industrial construction. The study results showed that people had a good review on the infrastructure system after the construction of industrial parks; they had better access to roads, electricity, and clean water. However, one conflict in the outcome of this study is that better infrastructure made people's incomes lower. This result is contrary to other authors' findings such as Philippe. L (2012), Nguyen Thi Hong Hanh, et al (2013), Nguyen Quoc Nghi (2012), Obong. L.B (2013). Explaining the results, the authors pointed out that it was the specific area. Before the industrial zone was built and put into operation, people mainly lived on delivering goods by waterway transport. After the construction, people's income from transporting goods decreased. Besides, the authors used variables of distance, education, work experience, etc. as explanatory variables for income variable (dependent variable) in research model.

Previous studies often focused on the impacts of agricultural land loss on people's livelihoods in the countryside areas of Vietnam. This research, however, considered the impacts derived from the investment and development of industrial zones, as key factors affecting the land loss people's incomes. In addition, the research was conducted in the midland and northern mountainous areas of Vietnam, the possibilities and practicalities of the research were, therefore, ensured.

## RESEARCH METHODOLOGY

### Research site

Thai Nguyen province, the economic and political centre of the Northern midland and mountainous area in Vietnam, is the gateway to socio-economic exchanges between the Northern midland and mountainous area and the Northern Delta.

Along with the trend of industrial development in the country in general and the Northern midland and mountainous area in particular, Thai Nguyen has advocated synchronous building of industrial zones following the overall socioeconomic development plan of the whole country. By the end of 2015, Thai Nguyen province has six industrial zones: Song Cong 1, Song Cong 2, Nam Pho Yen, Tay Pho Yen, Quyet Thang, Diem Thuy. The establishment and development of these industrial zones have contributed to the economic restructuring, generating jobs for thousands of workers, and the development of ancillary industries and services in the province. The construction of six industrial zones in Thai Nguyen has covered approximately 1.420 ha of people's land, most of which is agricultural land. As a result, a large amount of labor would have to switch jobs; households would have to switch modes of livelihood. (Source: Thai Nguyen Management Board of industrial zones, 2015).

### Data collection

On the basis of the General Statistics Office questionnaires in 2006 (GSO, 2006), the researcher has designed household questionnaires to collect quantitative data for the study. In addition, the researchers adapted Tran Quang Tuyen's questionnaire (2003) to design a new one for this study. Particularly, the researchers used some questions related to problems in living standards of the people and the impact of loss of agricultural land on the income of the people. Based on these questions, the researchers design a suitable questionnaire to implement in Thai Nguyen province, Vietnam – a regional representative for midland and northern mountainous region of Vietnam.

After the questionnaire was built, the authors asked experts from the Ministry of Planning and Investment for advices to examine the appropriateness of the questionnaire research, then the authors has carried out adjustments and work with local people.

Data in the questionnaire include household characteristics, resources, incomes, and livelihood assets. There were 123 people who lost their land due to the construction of industrial parks. The data were collected from early April to late May 2015 using questionnaires to directly interview household owners with the presence of other family members.

## Data analysis methods

Inheriting the previous studies of Tran Quang Tuyen (2013), Tran Quang Tuyen et al (2014), Nguyen Quoc Nghi (2012), Saumik Paul et al (2013), etc, the researcher used the ordinary least squares (OLS) method to examine factors affecting household livelihoods. Factors that affect household livelihoods:

+) Land loss due to the construction of industrial zones (Land loss area): is the household land area recovered for the construction of industrial zones. The unit is  $m^2$ . According to Nguyen Van Suu (2009), when households lose their land for industrial zones construction or other purposes, a majority of people will get higher incomes if they can take full advantages of industrialization and urbanization. However, other people will have to face with unstable lives because they become unemployed when losing their land. According to Nguyen, VC, McGrath, T., & Pamela, W. (2006), Nguyen Thi Hong Hanh et al (2013), the loss of agricultural land will lead to poverty, and negative effect on people's income.

+) The accessibility to preferential policies (Policy approach): This is a variable the authors used to consider the possibility of policy approaches of households. The value of the variable will be 1 if the household has access to preferential policies, otherwise, it is 0. Results from Nguyen Quoc Nghi (2012), Huynh Thi Dan Xuan (2012), Le Xuan Thai (2014), Nguyen Van Toan et al (2012), Nguyen Van Thieu et al (2014), etc. show that the accessibility to policies is directly proportional to household income.

+) Non-agricultural investment (Non-agricultural investment): the actual investment of households for non-agricultural activities such as building hostels, running business services, ...Unit is million dong per year. According to Tu Quang Phuong et al (2013), the more the investment increases, the more the household income is.

+) The number of increased jobs in the industrial zones (The number of increased jobs): is the number of jobs each household gets more after the construction of the industrial zone. According to Le Du Phong (2007), and Tran Quang Tuyen (2014), the number of increased jobs contributes to increasing income for people.

+) The number of employees in the industrial park (the number of employees) is the quantity of household labor who work directly in the industrial zones. Unit: worker (s).

+) The number of unemployed workers (the number of the unemployed): is the number of employees in each household who are unemployed after the construction of industrial parks. Unit: worker (s). According to Nguyen Van Suu (2009), Le Du Phong (2007), unemployment is the main cause for household's poverty. The relationship between unemployment and household income is the opposite relationship.

In this study, the researcher used income as the variable for people's livelihoods. Household income was the whole earnings in a year, unit: million dong per year. Also, authors used sustainable livelihood framework of DFID (DFID, 1999) as theoretical framework for this research.

## ANALYSIS AND RESULTS

### Investment and development performance of industrial zones in Thai Nguyen province

There are six industrial zones which have been being built in Thai Nguyen province: Song Cong I, Song Cong II, Diem Thuy, Quyet Thang, Tay Pho Yen, and Nam Pho Yen. The information about each is shown as follows:

Table 1: Common information about industrial zones in Thai Nguyen province

*Unit: ha*

No.	Name	Location	Total area
1	Song Cong I	Song Cong town (Tan Quang commune)	220
2	Song Cong II	Song Cong town (Tan Quang commune)	250
3	Nam Pho Yen	Pho Yen district	200
4	Tay Pho Yen	Pho Yen district	200
5	Quyet Thang	Thai Nguyen city	200
6	Diem Thuy	Phu Binh district	350

*Source: The Management Board of Thai Nguyen industrial zones*

The reality of investment and development of industrial zones in Thai Nguyen province:

#### + Song Cong I

The total investment made in Song Cong industrial zone I is 165,121 million VND, in which issued capital: 126,351 million VND with 79,988 million VND from the central government and 46,363 million VND from the local government. Prepaid capital from investors and contractors is 38,861 million VND.

#### + Nam Pho Yen

The total investment made in Nam Pho Yen industrial zone is 149 billion VND with two areas B (26.7 ha) and C.

#### + Diem Thuy

The total investment made in Diem Thuy industrial zone is over 50 billion VND, attracting investors with nearly 30 ha of land for lease. At the moment, this industrial zone is being invested to fulfill other sectors in order to attract investors.

The remaining industrial zones are in process of construction and have initially attracted investment into infrastructure, production, and business.

### **The Impact of investment and development performance of industrial zones on people's livelihoods**

Investment and development activities of industrial zones have affected the incomes of people who lost their land. The results of the survey on 123 land loss households are shown as follows:

#### ***Descriptive statistics of variables***

Table 2: Descriptive statistics of variables from the survey results of land loss households

<b>Descriptive Statistics</b>			
	Mean	Std. Deviation	N
Y	168.745	104.9947	123
Land loss area	1265.85	1177.155	123
Policy approach	.24	.431	123
Non-agricultural investment	56.163	113.2879	123
The number of increased jobs	1.49	1.059	123
The number of employees	1.49	1.119	123
The number of the unemployed	.42	.747	123

Table 3: Descriptive statistics of variables from the survey results of households who did not lose the land

<b>Descriptive Statistics</b>			
	Mean	Std. Deviation	N
Y	72.263	31.3172	107
Policy approach	.35	.478	107
Non-agricultural investment	17.634	50.2397	107
Non-agricultural area	1001.98	1400.355	107
The number of increased jobs	.88	.809	107
The number of employees	.61	.798	107
The number of unemployed	1.26	.904	107

The survey results show that the average incomes of land loss households seem to be higher than that of households who did not lose land (168.745 million VND per year compared with 72.263 million VND per year). This is because land loss households got a relatively big compensation equivalent to the area withdrawn for the construction of industrial zones.

Results from the survey also show that the number of increased jobs for land loss households when the industrial zones were built is higher than that of households remains their land (1.49 additional jobs /land loss household compared with 0.88 additional jobs / household did not lose land). This phenomenon occurs partly because the land loss households were given priority in recruitment from manufacturing factories and businesses in industrial zones.

Moreover, the results show that when investment and development activities of industrial zones are carried out, in addition to generating more jobs for the resident people, there also appear negative effects because a number of people find it difficult or cannot adapt changes in the new environment. They have not found new livelihood strategies to stabilize their lives. A division of the members in those households become unemployed. The results show that the number of unemployed workers after the construction of industrial zones is relatively high: 1.26 employees / household who did not lose their land and 0.42 / land loss household (from the surveyed data).

### ***Verification of the conformity and defects of the model***

With the expected pattern for the study, the researcher conducted tests on the conformity of regression function and some defects of the model.

Table 4: Results from verifying the conformity and defect of the model from the survey results of land loss households

Model	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.797	.787	48.4546	2.289

a. Predictors: (Constant), The number of the unemployed, Non-agricultural investment, Policy approach, The number of increased jobs, land loss area, The number of employees

b. Dependent Variable: Y

Results from the tables show that the selected model is suitable; independent variables clarify the dependent variables relatively well, about 80%.



### The impact of investment and development results of industrial zones on the income of people whose land was withdrawn for the construction of industrial zones

From the data collected in interviewing households (including those who lost their land and those who did not), along with the help of SPSS 20.0 software, the authors apply the ordinary least squares (OLS) method to examine the impact level of results from investment and development activities of industrial zones on people's livelihoods. The results are shown as follows:

Table 5: Results of regression model

Model		Unstandardized Coefficients		Standardized	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	55.270	11.273		4.903	.000
	Land loss area	.019	.005	.216	4.179	.000
	Policy approach	28.738	10.846	.118	2.650	.009
	Non-Agricultural investment	.383	.048	.413	7.974	.000
	The number of increased jobs	30.002	5.230	.303	5.736	.000
	The number of employees	17.187	4.914	.183	3.498	.001
	The number of the unemployed	-22.799	6.724	-.162	-3.391	.001

a. Dependent Variable: Y

Results from Table 5 indicates that all variables in the study are statistically significant with an error of 0.05. Factors have different levels of impact on people's livelihoods. Non-agricultural investment has the highest level (Standardized coefficients = 0,413). The more non-agricultural investment is, the more households' incomes increase. When their land was withdrawn for the construction of the industrial zones, they got compensation in order to transfer their livelihoods. That sum of money and other advantages for non-agricultural activities such as trading, production and business helped improve their lives. However, the construction of industrial zones also caused negative effects on people's livelihoods. Unemployed workers made households' incomes decrease.

## CONCLUSION

From the research results, the researchers have proposed some recommendations in order to enhance the positive effects and limit the negative impacts of investment in the development of industrial parks on people's livelihoods, as follows:

Generating stable jobs and job transformation into other services for land loss people due to the investment in developing industrial parks is to fulfill the needs of the labor force in the area.

The investment in the development of industrial zones has made many people landless. In other words, those people lose their means of production, their jobs on agricultural land. On the other hand, when the construction of those industrial zones is finished, there will be a large number of employees from other areas coming to live and to work in the local area. Thereby, the demand for essential goods and services of daily life will rapidly increase. To create stable jobs and incomes for the local people, it is necessary to take the following specific measures:

Improving the quality of human resources and labor discipline for the land loss people due to the construction of industrial zones. The main reason is that the majority of those people do not have education level; their working competence and sense of discipline should normally not meet the requirements of the industrial production. Even though some enterprises may easily recruit those land loss people, the possibility of stable jobs and incomes is another problem. The employees, therefore, have to improve their profession and skills so that they can adjust themselves to the new environment.

For workers who cannot transform their jobs after land loss, the local government needs to have specific plans to support the livelihoods of this group. A land area near industrial zones should be scheduled so that people can resettle down and run other services such as building guesthouses, opening service shops, grocery stores, garage, etc, catering for the workers in industrial zones. This type of transformation is being implemented quite effectively because it not only creates jobs for local people, but also transforms the livelihood strategies for households. In addition, it provides services that meet the needs of employees work in the industrial zones.

Financing and guiding households to utilize their funds in transforming jobs and livelihoods: There needs to be financial support policies for land loss household so that they can transform their jobs, increase their incomes and settle down in their new life. One fact is that when receiving a large sum of compensation for their land loss, some households could not utilize it wisely for their new livelihoods because there was no economic development orientation from the local governments at that time, and businesses did not offer specific supports for those families. The question for this situation is how we can both invest in

developing industrial zones, which contributes to the local economic growth, and ensure the sustainable livelihoods for the local people and their descendants. Ample solutions have been given recently but a relatively feasible one is encouraging organizations and individuals whose land is recovered to make a contribution to business projects in large urban areas and industrial zones by their rights of land use. With this option, the households can use the compensation for their land loss to invest in the factories built on their land. In this way, the interests of the parties involved in this activity are clear:

For the households: When making their financial contribution to the construction of plants and factories, employees will become priority recruits those areas. Thus, employment opportunities for land loss people will rise up. A stable job means a stable income in the future. On the other hand, when they work in those factories, they will get medical insurance and social insurance. Not only people's incomes are stable but their health care is also improved. People will feel secure for their life in the future (after retirement they can live on their pensions)

The capital contribution of people into factories, and businesses has positive effects on both people themselves and enterprises. These sectors will attract more capital for their business, which helps them expand the scale of production and, in turn, generate more jobs for people.

For the enterprises: Encouraging people to make financial contribution via their rights of land use will facilitate businesses in the land clearance process, shorten the construction time period, and quickly put those projects into operation, avoiding deadlock due to the failure in reaching agreement on the land clearance with the people whose land is recovered.

Financial contribution will become another capital mobilization channel for business production. This will help enterprises quickly finish their projects and avoid deadlock.

Beside positive effects, the financial contribution via people's land use rights may have some disadvantages:

People may wonder whether or not they should make a financial contribution while they would receive a sum of compensation for their land loss to resettle. Meanwhile, if they make contributions via land use rights, they have to encounter financial difficulties at the starting periods as enterprises cannot come into operation immediately. Even when these units are put into operation in the first periods, people may only earn their incomes as workers, not the incomes from business profits.

In addition, the risk in the implementation of business production activities is inevitable if the production process does not work effectively. The people, therefore, would not be able to have additional funds from profit sharing.

## REFERENCES

- Doan Thi Binh, (2011). Đánh giá việc thực hiện chính sách hỗ trợ chuyển đổi nghề và tạo việc làm khi thu hồi đất nông nghiệp ở huyện Từ Liêm, thành phố Hà Nội [Assessing the implementation of job transition assistance and job generation policies when the State acquiring farmland in Tu Liem district, Hanoi]. Vietnam National University, Hanoi, Vietnam.
- DFID. (1999). Sustainable livelihood guidance sheets Hall- International, Inc
- GSO. (2006). Questionnaire on Household Living Standard Survey 2006 (VHLSS-2006). Hanoi, Vietnam: General Statistical Office.
- Le Du Phong. (2007). Thu nhập, đời sống, việc làm của người dân có đất bị thu hồi để xây dựng các khu công nghiệp, khu đô thị kết cấu hạ tầng kinh tế- xã hội các công trình phục vụ lợi ích quốc gia, NXB Chính trị quốc gia, Hà Nội [Income, life and work of people having their land recovered for the construction of industrial parks, socio-economic urban areas for the national interests, National Political Publishing House, Hanoi].
- Le Xuan Thai.(2014). các yếu tố ảnh hưởng thu nhập của nông hộ trong các mô hình sản xuất trên đất lúa tại tỉnh Vĩnh Long, tạp chí khoa học- ĐH Cần Thơ số 35 [ Factors affecting farmers' income in the patterns of production on paddy land in Vinh Long province, Science magazine –Can Tho University 35].
- Huynh Thi Dan Xuan et al.(2011). Phân tích các yếu tố ảnh hưởng đến thu nhập của hộ chăn nuôi gia cầm ở Đồng bằng sông cửu long, tạp chí khoa học- Đại học Cần Thơ [Analysis of factors affecting the income of poultry farms in the Mekong Delta, Science Magazine-Can Tho University].
- Nguyen Van Suu (2009). Industrialization and urbanization in Vietnam: How appropriation of agricultural land use rights transformed farmers' livelihoods in a per-urban Hanoi village? EADN working paper No.38
- Nguyen, V. C., McGrath, T., & Pamela, W.(2006). Agricultural land distribution in Vietnam: Emerging issues and policy implications. MPRA Paper No. 25587.
- Nguyen Thi Hong Hanh et al. ( 2013). Ảnh hưởng của việc thu hồi đất nông nghiệp đến đời sống việc làm của nông dân huyện Văn Lâm, tỉnh Hưng Yên, tạp chí khoa học và phát triển số 1 tập 11 [The impact of withdrawing agricultural land on lives of farmers in Van Lam district, Hung Yen province. Scientific journals and development No. 1, episode 11].
- Nguyen Quoc Nghi et al. (2012). Nghiên cứu tác động của Khu công nghiệp đến sự phát triển thu nhập của cộng đồng bị thu hồi đất: Trường hợp khi công nghiệp hòa phú tỉnh Vĩnh Long, Tạp chí khoa học, Đại học Cần Thơ [A study on the effect of Industrial zones on income improvement of land loss people at Hoa Phu industrial zone, Vinh Long province, Science magazine, Can Tho University].
- Nguyen Quoc Nghi et al.(2011). Các yếu tố ảnh hưởng đến thu nhập của người dân tộc thiểu số ở vùng Đồng bằng sông cửu long, tạp chí khoa học số 18. [Factors affecting the income of ethnic minorities in the Mekong Delta, scientific journals No.18].
- Nguyen Van Thieu et al.(2014). Các yếu tố ảnh hưởng đến sinh kế và giải pháp sinh kế bền vững cho người dân vùng lũ tỉnh An Giang, tạp chí khoa học [Factors affecting the livelihood and sustainable livelihood solutions for people in flooded areas in An Giang province.Scientific journals].
- Nguyen Van Toan et al.(2012). Ảnh hưởng của chương trình 135 đến sinh kế của đồng bào dân tộc ít người huyện Hướng Hóa tỉnh Quảng Trị, tạp chí khoa học- Đại học Huế số 3 tập 72B [Effects of 135 programs on the livelihoods of ethnic minorities in Huong Hoa district, Quang Tri province, and Science magazine Hue University 3 episode 72B].
- Tran Quang Tuyen. (2014). Đất đai, việc làm phi nông nghiệp và mức sống hộ gia đình: Bằng chứng mới từ dữ liệu khảo sát vùng ven đô Hà Nội, tạp chí kinh tế và phát triển số 202 tháng 4 năm 2014 [Land, non-agricultural employment, and household living standards: New Evidence from survey data in suburban areas of Hanoi, economic journals and development 202 April 2014) ].
- Tu Quang Phuong, Pham Van Hung (2013). Giáo trình kinh tế đầu tư, Nhà xuất bản đại học Kinh tế quốc dân Hà Nội [Investment economics introductory course, Ha Noi National economics University Publishing House].

Tran Quang Tuyen & Vu Van Huong, (2014). The impact of land loss on household income: the case of HaNoi's sub-urban areas, Viet Nam, International Journal of Business and Society, Vol. 15 No. 2, 2014, 339 – 358

Tran Quang Tuyen.(2013). Livelihood strategies for coping land loss among households in VietNam's sub-urban areas, Asian social science Vol 19, No 15

Saumik Paul et al. (2013). The livelihood effects of industrialization on displaced households: Evidence from Falta special economic zone, West Bengal, Discussion Paper No 13, Centre for European Economic Research.