Pattern of Suburbanization in Ho Chi Minh City and the Livelihood Transition of Suburban Farmers

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Abstract: The trend of suburbanization is emerging in Vietnam's major cities at a growing pace; and Ho Chi Minh City (HCMC), being the most urbanized and economically affluent city in the country, has reached this so-called urban "U-turn" where studies have suggested of growing urban relocation to suburb areas as early as in the 1990s.

Expanding the urban area undoubtedly has many benefits for urban residents, businesses as well as for the city's government. Nonetheless as the city expands, along with the increase in land conversion and the number of constructions at the suburban areas, many local dwellers are forced to relocate elsewhere to make way for new development. Observing the socio-impacts of relocated households, the HCMC Institute for Development Studies (HIDS) in 2014 presented its research based on a survey of almost 2000 relocated individuals in the city. The primary results showed, for instance, that 14% of the respondents experienced increase in their income, while 57% saw no change, and 29% earned less than before.

This paper differs itself from the study done by the HIDS in that it chooses to focus only on the livelihood transition of farm households in the suburban districts, rather than the general relocated suburban population. It should be understood that many of the local dwellers in the suburban districts were traditionally farmers or worked in conjunction with farming. The transition for them from agriculture to non-farm work in a complex and vibrant economy like HCMC can prove to be extremely difficult, especially if they have little experience working outside farming. The core interest of this paper henceforth is to understand the experience of agricultural households throughout the transition process.

Key words: Suburbanization; pattern; livelihood; farmers; HCMC; livelihood transition; land acquisition; land compensation.

1. Introduction

The assumptions are that: (1) on one hand, farm households, after receiving compensation money from land acquisition, would upgrade their lifestyles, enter the non-farm employment, increase their earning and move up in the social ladder; (2) on the other hand, agricultural farmers could be the group that faces the most challenges from relocation. In addition to having to resettle, they also have to cope with changes in their lifestyle as many are forced to give up agriculture to transfer to the non-farm sector. While the eventual income might be relatively higher, if they manage to find a

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suitable employment, it is unclear as to whether such household could or how long it would take for them to complete the transition to perceive the benefits of relocation.

The paper is divided into three parts. The first explains the rationale for the research, including literature reviews and statistical data showcasing the different stages of outward urban expansion and relocation in HCMC, and what implications have it made on the socio-economic level. The second part presents our research and empirical finding from the analysis of 200 agricultural households' surveys in suburban HCMC. Our study is foremost interested in the change in income and employment condition of traditional agricultural households after relocation. In the last part we conclude our paper by tying together the observed urban expansion phenomenon and its implications for suburban farm households post land acquisition process.

2. From urban centralization to urban expansion in HCMC

In the early phase of urbanization, urban development tends to take place at the central districts, and expansion toward the outer districts only occurs when opportunities in the centre begin to show sign of scarcity. Such pattern is well studied under the urban theory of 'natural evolution'. The central districts are to be developed first to satisfy the economic impetus. Commuting costs are reduced and the clustering of firms would promote supportive mechanism and local competition to achieve market efficiency. Businesses originally were locating in the central districts and in-migrants to city also follow such logic and choose to locate themselves in the centre, even illegally. Not only there were direct opportunities for employment at the centre but also the density of population in the area generates a more comprehensive platform for communication. Many rural workers came to city without certainty of employment and "the simple fact that many jobs are found by happening to be at the right place at the right time" make all the more reason for them to locate in or nearby the city's centre where everything is taking place.

The increased concentration of population in the central districts produce externalities of skyrocketing land price, traffic congestion, poor environment due to pollution and noise, and gradual failure of the public infrastructure to meet the increasing local demand. Urban expansion thus appears as a solution for city's government to combat the overcrowding central districts. According to the 'natural theory, evolution' suburbanization is triggered by the increasing demand for larger housing residence by the middle income class and the increased availability transportation means. Employment of decentralization would eventually take place where businesses also relocate to the suburban districts to exploit the benefits of lower costs of land and suburban wages.

2.1. Population settlement

Ho Chi Minh City, being the most mature

urban area in Vietnam with over 80% of the population residing in urban districts, is no exception from such urban evolution path. The most obvious way to observe the urban expansion (or suburbanization) phenomenon is through the population census. The growth in urban population in Vietnam's two largest cities of HCMC and Hanoi in the last couple decades was argued to be caused not by the increased concentration in the core districts but rather by the growing population settlement in the 'more remote peripheral areas'. Study on urban transformation in Vietnam, for instance, demonstrated a trend of outward inter-districts movement in Hanoi and HCMC during the period from 1994 to 1999. In the case of HCMC specifically, study claimed that such suburban development has started as early as in 1989 as population in the core districts stagnate until today and most gains in population took place in the suburban areas. Another study also demonstrated the trend of suburbanization into the new inner districts in HCMC from 1998 to 2005, reflecting it through the government's timeline for urban expansion.

Government plan for urban expansion in HCMC took effect in 1997 and 2003 with

the objective to reduce the overcrowding population in the central areas. In 1997, under the Decree 03-CP, urban districts of 2, 7, 9, 12, and Thu Duc were established; subsequently in 2003, Binh Tan was reclassified as urban under the Decree 130/2003/ND-CP. The HCMC government also noticed the importance of these districts in the years to come whereby the 6 districts were classified as 'developing inner-city urban districts' as contrast to the previous 13 'existing urban districts'.

The 'suburban' movement in this paper refers to the shift of population to the 'developing inner-city urban districts' - in other words, the 6 'developing inner-city urban districts' are the 'suburban districts'. HCMC districts are grouped in Table 1.1 according to the different phases of urbanization: (I) the first phase of urbanization would concentrate in the 'core urban centre', (II) the second phase would disperse to the 'new central districts', and (III) the third phase sees even more decentralization movement toward the suburban districts. Despite its small share of 'rural districts' population, the also experience stable population increase throughout the recorded period.

	1989	1994	1999	2004	2009	2013
Core Urban Centre						
District 1	32,083	23752	29,983	25,776	24,125	25,540
District 3	47,967	58813	46,588	40,940	38,654	39,270
District 4	42,584	53200	48,246	43,659	46,542	44,452

Table 1: HCMC's Urban Density by Districts from 1989 to 2013 (pp/km²)

District 5	48,946	62096	51,392	40,273	45,260	41,296		
District 6	29,207	36425	36,359	33,644	36,690	37,013		
District 10	39,685	47,902	42,314	41,161	40,277	41,815		
District 11	43,774	51,556	47,864	44,715	44,931	44,331		
Phu Nhuan	34,836	39164	36,222	35,998	37,548	36,979		
New Central Districts								
District 8	13,139	16096	17,575	18,728	21,177	22,468		
Binh Thanh	15,125	18788	19,717	20,370	22,327	23,258		
Tan Binh ⁽¹⁾	8,414	10519	15,113	20,032	21,603	23,865		
Go Vap	8,156	10252	16,167	22,463	21,112	30,605		
Suburban Districts								
District 2			2,043	2,492	2,914	2,823		
District 7			3,131	4,396	7,335	7,866		
District 9			1,320	1,747	2,172	2,495		
District 12			3,224	5,359	7,077	9,275		
Thu Duc			4,388	6,893	8,625	10,629		
Binh Tan				7,417	10,701	12,628		
Rural Districts								
Cu Chi	508	590	598	662	783	884		
Hoc Mon	1,261	1890	1,876	2,230	3,151	3,743		
Binh Chanh	674	800	1,101	1,182	1,668	2,035		
Nha Be	587	1092	645	720	1,020	1,255		
Can Gio	70	86	82	94	104	103		

Pattern of Suburbanization in Ho Chi Minh City...

Source: HCMC Statistical Yearbook (1989, 1994, 1999, 2004, 2009, 2013)

HCMC nonetheless remains the most attractive city for migrants, providing exiting urban lifestyle with good service and opportunities in education and employment. Even for migrant, the clear suburbanization phenomenon has had an influence on their settlement preferences toward the outer districts. The influential factors include the lower cost of housing, less crowded, and the existence of adequate infrastructure for utilities and commuting, as well as a growing number of businesses that have started relocating to the suburban districts.

2.2. Employment, economic and land use structure

As an economy becomes more mature,

⁽¹⁾ Tan Binh was divided into 2 urban districts in 2003: Tan Binh and Tan Phu. The table keeps Tan Binh as one district for ease of understanding and drawing references.

the share of agricultural contribution in the overall economy will eventually shrink and be replaced by the growth in other industrial and service sectors. This does not mean however that agriculture output has been declining but rather the growth in other sectors has overshadowed that of agriculture. In fact HCMC's agricultural sector is still growing at a significant rate, recorded at 5.8% annually during the period from 2001 to 2010. The decline in agriculture share in the economic structure is recognized to be positive as it indicates a withdrawal from subsistence farming and a move toward modern urban agriculture and other industries.

The development pattern of HCMC's agricultural sector is also partly caused by the transformation in land use and the shift of employment from agriculture to other second and tertiary sectors. For land use, the suburban districts of 2, 7, 9, 12, Binh Tan, and Thu Duc were all 'rural' before being re-classified into 'urban districts'. These 6 suburban districts covers 35,182.60 ha, 16.79% of HCMC's total land area, and had 2,157,252 inhabitants by 2010, about 30% of the city's population. The transformation from rural to urban classification made way for the conversion of a large number of farmland into non-agricultural land. On average from the year 2000 to 2013, more than 1000ha of agricultural land in HCMC was converted for other uses annually. Agricultural land declined from 62.4% of the total city's land to 55.79%, while nonagricultural experienced an 8% increased from 35.46% to 43.99%.

In regard to employment, farmers are slowly moving away from the agricultural sectors to be involved in the modern economy in the industries or service sectors. Over the decade from 1999 to 2009, while the total number of labor force in HCMC had increased dramatically from over 2 million to almost 3.6 million, agricultural labor have declined by 50,000 farmers, while the service industries have taken in approximately 800,000 new workers.

Major changes in land use and employment structure were the consequences of urban expansion in HCMC. As mentioned before, a large amount of farmland has been appropriated in these new districts to accommodate for the construction of new infrastructures and residential areas. As land acquisition program took' place, many farm households have to relocate or change employment either because their farmland has become too small or inexistent. Agricultural households have been generally on decline in all districts outside the 'urban core centre'. In the 'suburban districts' which our study focuses on, farm households have been reduced by over 6 times from 19,184 in 1997 to merely 3082 households in 2011.

3. Suburban agricultural households in HCMC after land acquisition

3.1. Research methodology

The paper sets out the objectives to explore the livelihood transition of agricultural households in HCMC's suburban districts. The area for research is therefore restricted to within the six districts of 2, 7, 9, 12, Thu Duc, and Binh Tan. Due to the limited time and resource and the difficulties in locating the households that fit the profile, the questionnaires were only done in four districts (district 2, 9, and Binh Tan). It should be taken into account however that the distribution of questionnaires is not equal in all districts. District 9 has the highest number of surveyed households due to the fact that the study was first conducted here. Binh Tan and District 2 were only chosen later on to diversify the samples to cover a broader spectrum of HCMC's suburban change.

The 200 surveyed households, categorized as 'Agricultural household after land acquisition', are households that previously worked in agriculture and have land already been acquisitioned or converted during the period from 2010 to 2015.

Table 2: Location Distribution of Surveyed Agricultural Households

Location	District 9	District 12	Binh Tan	District 2
Agri. Households after Land Acquisition	120		40	40

Various aspects were covered in our questionnaires, including: the social demographic information; the agricultural land size and types of agriculture; the compensation scheme and priority use of compensation fund; the livelihood transition indicators (income, employment, housing condition, etc.); the challenges for households after land acquisition, and the current living condition.

3.2. Research findings

The 200 surveyed households are home to 938 people, out of which 51.9% are female. Approximately three quarter of the population is within in working age from 16 to 60 years old, with only 12% over 60 and 13% children. Despite the high percentage of adults in the cohort, educational attainment remains low with the majority (61%) only graduated from middle school, and a further 22.9% with high school qualification.

The smallest agricultural household in this group only owned $53m^2$ of land compared the largest household with 30,000m². Out of 200 households, 192 have undergone total land acquisition, meaning they no longer have land afterward. In the aftermath of the acquisition process, the majority of households (61%) have chosen 'cash and relocated land, or house with land permit' as their compensation preference, compared to only 3% opted for 'cash and apartment relocation' This indicates the tendency of traditional farm households to still prefer house on land rather than apartment despite which in most cases are provided at better condition than their previous housing settlement. Further survey on the difference between housing settlements of the cohort before and after the land acquisition also suggests that their housing conditions have improved whereby over 80% of the surveyed households now reside in 'permanent housing' compared to only under 50% before land acquisition.

There is a large difference in cash compensation per square meter between the smallest and the largest receiver, 83,000 VND and 6.5 million VND respectively. The average cash compensation per square meter per household was calculated at 1.1 million VND, with the mode of households received less than 300,000 VND. Even as the choice of compensation for households are skewed towards those also receive relocation service after the acquisition process, as many as 148 households have answered that they had invested a small or large percentage of their compensation fund to buy land or house. It could be deduced to a certain extent that many households perceived real estate as a sound investment option.

As for agriculture, 166 out of 200 households did work and earn part of their income from agriculture. The statistic is now reversed as 180 households no longer earn anything from agriculture. Only 17 household still actively work in agriculture as of today. However the types of farming practice have changed, limiting to only: aquaculture, animal husbandry, decorative trees and flowers, and vegetable farming; farming works that require large plot of land and low profit such as rice, industrial crop can no longer survive as urban agriculture. A mismatch could be spotted as 180 households no longer earn from agriculture but 183 households no longer work from agriculture. This could be explained for instance that even if the household no longer work in agriculture, its members could work in farming for other neighbor households.

Our survey also asked an additional question on whether the household would want to work again in agriculture regardless of their current employment. A quarter of them (50 households) answered 'yes' to the question, meaning that 33 households that are now not working in agriculture would like to return again to farming. For these families to think of returning to agriculture would suggest that they are more likely to be better off continue with farming and that the land acquisition and the transition toward the non-farm employment might not have brought about better lifestyle or income to balance the costs of abandoning farming and relocation.

The average monthly income by household member increased overtime, however such increase is small and thus is deemed insignificant or even negative if taking into account the inflation rate. In fact, 107 out of 200 households responded that their current livelihoods are more difficult than before. As to what challenges have they faced with since the resettlement, 143 families have had difficulties in relation to employment and income, and 79 have struggled to adjust to the change in household's living expenditure.

An interesting opposite finding was found when comparing the general income and employment condition before and after land acquisition. Employment condition seems to have improved after the land acquisition contrasting to the general feeling of decline in household income. A structure change in employment status has been observed however that while the number of student has decreased (from 21.75% to 15.9%) retirement and unemployment have picked up, from 2.77% to 13.65% and from 2.03% to 4.48% respectively. This could imply that non-farm employment in overall provides better working condition but the transition to find such work can prove to be difficult, especially for traditional, lower educated, and older famer.

4. Drivers for effects on livelihood transition

The paper is interested in how certain pre-conditions of the households can have an effect on whether that household will have a difficult or smooth transition after the land acquisition. An array of measures has been conducted based on our questionnaires, however the author would like to focus on only two analyses in this the educational attainment paper: by household, and the livelihood and earning condition after relocation.

It should be noted however that our following analysis does not include regression or any other correlation measures because (1) the sample size is too small, (2) the households were chosen by convenience to fit the profile, and (3) the questionnaires were not aimed to generate any kind of correlation model. Henceforth no general relational inference will be made based on our survey.

4.1. Impacts from education before land acquisition

Educational attainment is believed to have an influence upon households' income structure whereby higher educated households would be more likely to diversify their income from other non-farm sources. The diversification thus reduces the shock of employment and income change during the transition period for higher educated households that rely less on agriculture. Educational attainments are classified here into 3 groups of 'Low', 'Average', and 'High' education – the average level of education by household is taken as the 'mode' of that household's members educational level.

Low Education: Illiterate, Kindergarten, Primary School

Average Education: Middle School, High School, Vocational School

High Education: Vocational College, University, Graduate School.

+ Education and Land size

We assume that there is a relation between the size of land and the educational attainment level, because as households' members become more educated it is likely that they will no longer participate in farming activity therefore will sell or give up their farm land - the land size would then decrease along with higher educational attainment. The result shows that the majority of households either have land less than 500m² (34.5%) or higher than 3000m² (36.5%). 'Low' and 'High' educated reflects this result clearly in that their households are also clustered in the group with small or very large land plot. The 'Average' educated households on the other hand reflect a relatively more evenly distributed land size than in the other groups. However this could be because the majority of the cohort attained 'Average' education (125 out of 200) thus allowed this group for more variations.

In addition, we could observe that the 'High' educated households group on average has the smallest land size. However the difference is quite small, thus insignificant, between the 'Low' and 'High' groups. The 'Average' education cohort surprisingly has the largest land on average (over 4000m²). This analysis serves for a better understanding of the land size division between households of different educational level but fail to provide a consistent trend of educational attainment and land size variation.

+ Education and Share of agricultural income

Another line of reasoning is that as households become more educated, their reliance on agriculture as a source of income will reduce. Reflecting it to the survey, a trend is demonstrated in that higher educated households rely less on agriculture than lower educated households. For instance, before the land acquisition, 'High' educated households earn on average 40.86% of their income from farming, while households with 'Average' education earn 42.60%, and 'Low' education 52.17%. The pattern remains constant even after land acquisition despite the general share of income from agriculture have much decline. The result manages to demonstrate the trend according to our logic; however the differences between the means of each group are quite small to draw any specific conclusion.

4.2. Impacts on livelihood and earning condition after land acquisition

The livelihood and earning condition of agricultural households after land acquisition is the most important finding for our paper. The analysis presented here focus on two aspects: compensation and income. As land acquisition is the force that drives these households to transition, compensation is also analyzed where it is believed that higher compensated households (in total) would have an easier time adjusting to the new livelihood. The author also believes that income plays a major role in determining whether the households experienced difficulties or not after land acquisition.

+ Compensation and Livelihood and earning condition

Record shows that over half of the households receiving compensation from 500 million to 2 billion VND have a 'more difficult' livelihood after land acquisition. At the reception range from 2 to 5 billion VND in compensation, households are more evenly spread according to living condition; while for households receiving more than 5 billion VND, the scale is tipped with the majority of the households feel they have a better livelihood today. Comparing the average compensation, the trend is consistent with lower compensated households experienced 'more difficult' livelihoods, average compensated households experienced 'no change', and higher compensated households have a 'better livelihood and earning condition'.

Although this paper cannot go into details, several factors should be further reviewed. It is understandable that low compensated households could face more challenges during the transition thus making their livelihood 'more difficult'. Nonetheless, a question still remains as to how much in compensation is enough to facilitate the transition of agricultural households? As we could observe in the analysis, 6 households in the range of 2 to 5 billion, and 4 households receiving more than 5 billion VND still reported a 'more difficult' livelihood and earning condition. The highest compensated household in our survey, receiving in total 22 billion VND, also belongs to this group that experiences a 'more difficult' livelihood.

+ Income and Livelihood and earning condition

- Average income per households' members after land acquisition

The analysis shows that the average income of households' members that reported a 'more difficult' transition is the lowest at 2.2 million VND, while the average income of households' members that reported a 'better livelihood and earning condition' earn about 1.5 times that amount, at 3.4 million VND. The difference in income between the two groups is significant enough here. However interestingly, households that reported 'no change' in their livelihood and earning condition are actually those earning the most on average, at 5.5 million (or 2.5 times the average income of households that reported 'more difficult' transition).

One reason could be that the 'no change' group had already reached a certain earning threshold prior to the land acquisition thus small changes in income might not be able to produce an impact on their livelihood. Another assumption, which can be reflected in our analysis, is that the households that reported 'no change' include odd households that earn exceptional income. If we look at the table, the minimum earning for the 'no change' group fits between the 'more difficult' and 'better earning and livelihood' groups; but looking at the maximum, the 'no change' group includes household with members earning on average 40 million VND, thus skewing the average income much higher.

- Change in income

A simple assumption would be that households that experienced an 'increase' in income would have a 'better livelihood and earning condition' and vice versa, whereas households experiencing a 'decrease' in income would report a 'more difficult' transition. Our analysis presents over 73% of households that reported a 'decrease' in income answered that their livelihood has become 'more difficult'. At the same time 43.4% of those experienced an 'increase' in income now have a 'better livelihood and earning conditions'.

The assumption seems to apply well for the group with 'decrease' income and 'more difficult' livelihood. However for other groups such assumption only works to a certain extent. Half of the households that experienced 'no change' in income reported a 'more difficult' livelihood, and only 32% reported 'no change'. In addition, surprisingly for the group that earns more after the land acquisition, 36.8% still reported of a 'more difficult' livelihood.

4.3. Discussion

From our analysis, a number of odd results have been observed and therefore will be discussed here. Analysis on education has been more consistent despite the difference remains relatively small. The odd factor is the 'Average' educated households group, which is comprised of over half our cohort. Future research should take into the account this aspect and thinning out the 'Average' education group by further dividing it to, for instances, 'Average low' and 'Average high'. This would allow for a better trending analysis.

The second focus on the impacts of compensation and income on livelihood transition brought about more controversial results. In regard to compensation, we could observe 6 households in the range of 2 to 5 billion, and 4 households receiving more than 5 billion VND still reported a

'more difficult' livelihood and earning condition. The highest compensated household in our survey, receiving in total 22 billion VND, also belongs to this group that experiences a 'more difficult' livelihood. Further research on the spending and saving structure of the households' compensation fund should be able to provide clearer understanding of such results.

As for income, the group that perceives 'no change' in their livelihood earn the most on average. One reason could be that the 'no change' group had already reached a certain earning threshold prior to the land acquisition thus small changes in income might not be able to produce an impact on their livelihood. Another assumption, which can be reflected in our analysis, is that the households that reported 'no change' include odd households that earn exceptional income. If we look at the table, the minimum earning for the 'no change' group fits between the 'more difficult' and 'better earning and livelihood' groups; but looking at the maximum, the 'no change' group includes household with members earning on average 40 million VND, thus skewing the average income much higher.

Lastly for the analysis of income change, although our assumption did apply to a certain extent, exception still exists, whereby half of the households that experienced 'no change' in income reported a 'more difficult' livelihood, and only 32% reported 'no change'. In addition, surprisingly for the group that earns more after the land acquisition, 36.8% still reported of a 'more difficult' livelihood. Such exception emphasized what we could not cover in our paper, which is the difficulty during transition that could not be solved solely through general financial improvement.

5. Conclusion

The paper has carried out its objectives: to demonstrate the suburbanization trend in Ho Chi Minh City and the socio-economic impacts that entails, including changes in demography, economic structure, employment, and land use; and to explore the current livelihood of agricultural households after land acquisition, understanding the factors which could be perceived as challenges.

There were two assumptions for this paper. The first believes that agricultural households would be better off as they would stop farming and join the non-farm sector, which is more productive, stable, and higher paid. Second is that households would be worse off as they would have to struggle to find new employment, cope with new livelihood, and so on.

The results from our data have been more in favor of our second assumption despite several positive findings, for instance, that a relative majority of feedback on working condition saw an improvement, and that many households have moved to better housing after land acquisition. Average income has increased slightly overtime, although such increase has not been sufficient as almost half of the households have felt that their income has declined, while a further 20% felt no change in their income. Working condition might have been improved but employment status has suffered with a 2.4% increase in unemployment. In regard to the current livelihood and earning condition, over half of the households (53.5%) felt it to be 'more difficult'.

Further analysis into education, as a driving factors impacting the outcome of transition, shows no significant relation between educational attainment and land size, while a consistent trend was discovered between education and the share of agriculture income before and after land acquisition (higher education means lower share of agricultural income). In addition, compensation and changes in income were measured against the livelihood and earning condition of agricultural households after land acquisition. The results in this analysis have supported our second line of assumption, whereby even if households have received a large amount of cash compensation or have perceived increase in income, many have answered that their livelihoods have become 'more difficult'.

In conclusion, suburbanization is beneficial for both city's government and its citizens, providing new areas and opportunities for residence, business, and development work. However in the path to accommodate such suburban development, many agricultural households that were living in these areas will be fundamentally affected during the transition process. The paper gives insights into the transition process of suburban agricultural households despite several limiting factors in sampling size and area which reduce the implication level of the analysis. One thing is clear that the fundamental change in livelihood of agricultural farmers is complex and henceforth demands more than just financial measures to assess and address the issue.

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Pattern of Suburbanization in Ho Chi Minh City...