REPRINT

TONDO FORESHORE 1974 AND 1984: AN EVALUATIVE STUDY OF SOCIOECONOMIC IMPACTS

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This paper examines socioeconomic changes brought about by the Tondo Foreshore Development Project to residents' living conditions after project implementation. It compares levels of income, savings patterns, school enrollment and pursuance of high school education, perceived community problems and health conditions through mortality rates before and after project implementation. Significant differences in these variables are found, suggesting that an examination of project feasibility in the light of its socioeconomic impact permits a more realistic and comprehensive method of project evaluation than the normal procedure of cost-benefit analysis which mainly looks into increases in income. Thus, socioeconomic impact studies of this type are recommended for future evaluation researches.

The only existing evaluations of housing development in the Philippines are on the Tondo Foreshore Development Project. But these evaluations do not include any post-test study on qualitative changes. One reason could be the longer observation period required before clear-cut observations can be made. Instead, the project has been evaluated according to increases in land value (NHA 1983) and structural value (Jimenez 1983), housing consolidation and rate of turnover of residents (Reforma 1981a and b), efficiency in serving the target population (Lindauer 1981) and the cost recoverability of the project and affordability levels of residents (Loanzon 1978). This study proposes to add more comprehensiveness to previous project evaluations by examining the project's socioeconomic impact three years after it was completed.

The significance of the study is that it will encourage the undertaking of more postevaluation studies on development projects and in turn, provide more comprehensive and indepth information to the Philippine government in coming up with guidelines on urban housing development. In addition, new ideas could be derived for designing urban development schemes, not only for the Philippines but also for other developing countries. This case study of Tondo Foreshore Housing Development Project addresses the following question: does a slum upgrading project bring about improvements in the socioeconomic conditions of residents after its implementation?

Background of Tondo Foreshore Urban Development Project¹

Tondo Foreshore was the largest squatter area not only in the Philippines, but in all Southeast Asia before its development. Its boundaries are the following: Vitas River in the North, pre-war private lands in the East, Pasig River in the South and North Harbor complex in the West. As a squatter colony, the overall conditions of Tondo were poor. Among those with jobs, 43 percent had temporary employment. In general, average monthly income (P371) was lower than average consumption expenditure (P392). infrastructure, e.g., water supply, drainage systems, health and educational institutions, and the like were lacking. One out of every five housing structures were built out of salvaged materials and because of frequent flooding, 62 percent were built on stilts. Because of high population density (157,860 individuals or 23,920 households), an average of two households occupied a housing unit. With this, the Philippine government developed the 137hectare reclaimed land northeast of Manila Bay and introduced the following changes:

- 1. Landownership. The area was subdivided into individual lots at an average size of 57.6m² (15,000 housing units were reblocked and amortization at 12 percent per annum within a 25-year period was granted to the residents without any initial downpayment.
- Extension of credit through a home materials loan program was provided for improvement of housing structures and for small-scale business. The maximum

- was P3,500 worth of construction materials per family;
- Services facilities, e.g., individual sewer water supply construction per housing unit, surface water drainage system, roads, footpaths and street lighting were provided.
- Social and economic development programs to promote better education, health, hygiene and environmental sanitation, self-reliance and job opportunities were implemented;
- Community facilities, e.g., a public high school, elementary schools, health centers, multi-purpose centers with open space for recreational activities, and vocational job training facilities were constructed or upgraded;
- 6. The area's industrial and commercial property was developed.

Related Literature and Analytical Framework

Studies show that socioeconomic changes could be induced by development projects. Silas (1984) studied the Kampung Improvement Program of Indonesia and showed that the program made improvements on general public works, e.g., roads and footpaths. It was observed that after the footpaths were constructed, individual households along it started planting trees and flowers, provided garbage cans and installed street lighting by using their individual houses' electricity as the source of lighting. In other areas, the residents provided community meeting halls and guard houses. They held periodic communal cleaning activities for the maintenance of their community's environment.

Leaf (1983), in his study of the development package in a village in Punjab known as the "green revolution," observed the following changes: new varieties of crops and new types of farm tractors were adopted, more of farmers' produce were marketed rather than consumed, well pumps outside of the village were utilized, the flat rate system of work and wages was introduced, clearer definitions of landownership laws were done and encouraged villagers to save money to buy extra land, and membership in the village cooperative became widespread and facilitated collections against credit.

Maynard (1975) evaluated the Muong Phieng Cluster Program in Laos. The program provided improvements in physical and social infrastructures, e.g., roads, schools, medical facilities and rice mills. The following socioeconomic changes were observed: increase in school attendance, increase in livestock sales, shift from the use of horses to motor vehicles, and increase in importance of monetization for transactions,

From the above literature, possible indicators that could determine the socioeconomic impact of a development project are: income, savings, education, health and community problems. The relationships of these variables to a housing development project serve as the study's analytical framework.

The following shows how a development project could induce socioeconomic changes in an area:

- Income. The upgrading of vocational training facilities, hand in hand with social and economic programs, allows residents to improve their working skills and have better or high-paying hobs than before. In turn, higher levels of income become possible. Thus, a housing development project could be said to bring about an increase in the income basis of residents.
- Savings. The provision of landownership privileges could be an incentive to save and increase one's level of savings. This is because land is a scarce resource and caters to man's shelter needs, i.e., to be able to build a house, land is necessary. In addition, ownership of land means a right over assets and increases one's financial stability. With this understanding, residents could be encouraged to postpone present consumption for future consumption in order to finance future needs, e.g., purchase of land. Ergo, an urban housing project could be anticipated to induce more people to save and induce higher savings levels among those who already have.
- 3. Education. The construction of high school and upgrading of elementary schools as public goods² provide initial endowments for more permanent sources and higher levels of income in the future.

In turn, this could induce an increase in the proportion of schooling members who go to high school and elementary school, and also an increase in the proportion of schooling members who continue going to secondary school after graduating from primary school. Hence, a development project could be expected to cause improvements in the education of residents, allow them to have better types of jobs and in turn, better chances of earning more.

- Community Problems. Maslow (1970) discussed man's hierarchy of needs and stated that after man is able to satisfy his physiological needs, he moves on to a higher rank of needs—his safety needs. Then, he goes on to the third level of needs and so on, until he is able to satisfy his highest rank of needs which is selfactualization. The provision of landownership privileges, improvements of basic infrastructure, hand in hand with social and economic programs, could be said to cater to man's basic needs, and in turn, cause a shift in residents' perceived community problems-from survival needs to lesser ones. Hence, a slum upgrading project could be anticipated to induce changes in the perception of residents regarding community problems.
- Health. The construction and upgrading of health centers, hand in hand with health improvement programs could allow greater exposure to health institutions and those in the medical profession and in turn, allow residents to have a better know-how of preventing the occurrence of serious illnesses and possible deaths. With this, the mortality rate of the community due to sicknesses Hence, a housing could decrease. development project could be expected to bring about an improvement in the health conditions of residents and in turn, contribute to the decrease of mortality rates.

Hypotheses

When a housing development project introduces a land-ownership program, improves community infrastructure and basic facilities, enhances the area's social amenities by establishing or upgrading schools and health centers, and implements programs for better job opportunities and hygiene, differences in the situation of the residents before and after project implementation could be observed. This study hypothesizes that Tondo residents will possess a better socioeconomic condition, e.g., higher levels of income, improved savings patterns, higher school enrollment and greater pursuance of further education, better health conditions through lower mortality rates and less basic problems perceived after project implementation (1984) than before project implementation (1974).

The 1974 data of Tondo Foreshore were taken from the National Housing Authority while the 1984 data were obtained through a questionnaire survey made by the author on January 1985. A total of 181 households were randomly chosen and interviewed.³ But the final analysis only included families who stayed in the area since 1975 and who have only one income-earner. This was done in order to obtain Tondo respondents who were exposed to the before-and-after project development periods and to eliminate the selection of extended families. Thus, the sample size was reduced to a total of 53 Tondo cases. The respondents were either the household head or the member next in line. They were assumed to be most knowledgeable of the conditions of the household and its members and thus, were asked to speak in their behalf.

The questionnaire used for primary data gathering was pre-tested twice before the actual survey and covered the following points:

- 1. Household size
- Schooling members. Since schooling members who go to high school could not have been admitted without having gone through elementary school, the number of schooling members going to high school over elementary school at the time of the survey was used to determine

the proportion of schooling members who continue studying beyond primary level. This method was used because the author anticipated that those going to elementary school 10 years ago would have graduated from high school by the time the survey was done. For purposes of comparison, the same method was used by the author for the 1974 data.

- 3. Household's income, consumption expenditures and savings patterns. Income and expenditures were examined in terms of monthly earnings and expenses of the household. For savings patterns, the number of residents who save and the level of savings of those who save were looked into. Since the study considered households with only one income-earner, the number of residents who save was considered to be equivalent to the number of households who save.
- Perceived community problems. The questions for this category were openended. The responses were categorized as follows:
 - a. Basic facilities. Problems on clogged canals, lack of electric and water supply, lack of garbage facilities, poor sewer and drainage systems and poor sanitation facilities.
 - b. Physical infrastructure. Problems on roads, alleys, footpaths and footbridges.
 - c. Physical environment. Problems on cleanliness, congestions, floods, noise pollution and mosquitos.
 - d. Social infrastructure. Problems on education, health and sports facilities.
 - e. Landownership. Problem of not being able to own the land one is staying on.
 - f. Economic crisis. Problems on food/ malnourishment, financing, high cost of living (specifically on house and land rent), unemployment and insufficient income.
 - g. Peace and order; social relationships. Peace and order are problems on drug addiction, drunkards, gambling, homicide, hold-up/robbery and other kinds of community trouble. Social

relationships are problems on lack of cooperation, stubbornness of community members, laziness and misunderstandings.

h. No problem stated.

Mortality rate due to pneumonia. Based on NHA's survey of the health conditions in Tondo Foreshore in 1974, a major cause of death is pneumonia. Compared to other major causes, e.g., tuberculosis and heart disease, the rate of mortality due to pneumonia was found to be extremely higher in Tondo than in Metro Manila. The pneumonia death rates then were 195.7/100,000 population for Tondo Foreshore and 69.2/100,000 population for Metro Manila. Tuberculosis death rates were 76.2/100,000 population for Metro Manila and heart disease death rates were 67.6 and 56.8 per 100,000 population for Tondo Foreshore and Metro Manila, respectively. mortality rates due to pneumonia were opted to determine the health conditions in Tondo after project implementation.

Tondo Foreshore was mainly compared to the general situation of Metro Manila owning to the absence of a control group. Data for Metro Manila were taken from the following offices: National Census and Statistics Office (NCSO), National Economic and Development Authority (NEDA), and Ministry of Education, Culture and In analyzing the project's Sports (MECS). socioeconomic impact, data on income, consumption expenditures and savings were examined with respect to their real values in 1974 and 1984 and several t-tests of proportion between the 1974 and 1984 data were done for variables on: (1) number of residents who save; (2) school enrollment and number of schooling members who continue going to high school beyond elementary school; and (3) perceived community problems.

Findings

The findings of the study are presented with respect to: income, expenditures and savings; education, perceived community problems and health.

Table 1. Comparison of Monthly Income, Expenditures and Savings of Tondo Foreshore: 1974 and 1984

Variables	1974 (N=2,643)		1984 (N=53)		Percentage Increase	
	Nominal Value	Real Value	Nominal Value	Real Value	In Real Value	
Mean income	P371	P505	P2,212	P863	70.9%	
Mean expenditures: Total expenditures	392	533	2,750	1,072	101.1	
Food expenditures	176	239	1,500	585	144.8	
Mean savings of those who save	193	262	197	77	-70.6	

Note: Real value is in 1978 prices, using the CPI as deflator.

Sources: 1974 figures - National Housing Authority, NHA/TFDA Socioeconomic Survey Report: Tondo Foreshore Urban Renewal and Resettlement Project, 1974; 1984 figures - from the author's January 1985 survey.

Table 2. t-test of Difference of Proportions of Variables for Tondo Foreshore: 1974 and 1984

Variables	1974 (N=2,643)	1984 (N=53)	t-ratio (d.f.=2,694)	
Residents who save	.380	.491	1.63	
Education:				
Population enroled in				
elementary school	.185	.566	6.93**	1
Population enroled in				
high school	.069	.547	12.92**	
Schooling members who go to high school after				
elementary school	.375	.967	8.71**	
Perceived Community Problems:				•
Basic facilities	.200	.094	-1.89	
Physical infrastructure	.270	.019	-4 .11**	
Physical environment	.230	.075	-2.63 *	
Social infrastructure	.170	.000	-3.27*	
Landownership	.146	.019	-2.65*	
Economic crisis	.461	.660	2.88*	
Peace and order; social				
relationships	.053	.189	4.25**	
No problem stated	.025	.019	260	

Income, Expenditures and Savings

Table 1 gives the nominal and real values of income, expenditures and savings of Tondo residents in 1974 and 1984. Based on this table, the monthly mean income of Tondo residents increased by about 71 percent in real value and monthly per capita income increased by about 61 percent. Per capita income is about P76 in 1974 and about P123 in 1984. Given the rate of inflation for 1984 at 50.3 percent (NEDA), the increase in real per capita income is sizeable.

In spite of an increase in the real wage of Tondo Foreshore residents in 1984, the real savings between the two periods show a decrease of 70.6 percent. This could stem from a larger increase in real expenditures than in real incomes of residents over the 10-year period. Moreover, the increase in real expenditures of food is relatively higher than the total expenditures which could be explained by the increase in average household size in Tondo between 1974 (a family had 6.6 members) and 1984 (a family had 7 members) and in turn, be interpreted as having more mouths to feed.

Table 2 shows the proportion of residents who save in 1974 and in 1984 as not significant (t = 1.63; p < .20). Comparing the percentages of savings depositors in the Philippines (Table 3) and Tondo Foreshore, there is an 11 percent increase for Tondo within a 10-year period while

a 13 percent increase is observed for the Philippines from 1974 to 1981. Thus, the increase in the proportion of Tondo residents who save could stem from the general increase in the number of depositors for the entire Philippines rather than an impact of the housing development project.

In general, the findings do not fully support the study's hypothesis with respect to income, expenditures and savings. Real income of Tondo residents improved within a 10-year period but is relatively lower then consumption expenditures. In addition, level of savings decreased and no significant difference in the proportion of residents who save in 1974 and in 1984 were observed.

Education

Table 2 shows significant increases in the proportion of primary and secondary school enrollment and in the proportion of school age population who go to high school after elementary school between 1974 and 1984 while Table 4 shows the general trend in education of Metro Manila within the same period. Comparing the proportion of high school-bound members in both places, one observes that the proportions in Metro Manila decreased while those in Tondo Foreshore increased within the

Table 3. Total Number of Deposit Accounts in the Philippines (1974-1982)

Year	Deposit Accounts	Philippine Population ^a	Percentage of Deposit Accounts	
1974	8,981,504	40,757,800	22.04	
1975	9,956,988	41,947,800	23.74	
		(42,071,000)		
1976	11,343,812	43,172,600	26.28	
1977	° 12,629,370	44,433,200	28.42	
1978	14,202,660	45,730,500	31.06	
1979	15,563,423	47,065,800	33.07	
1980	16,468,457	48,440,000	34.00	
		(48,098,000)		
1981	17,540,298	49,854,400	35.18	

^aYearly population of the Philippines has been estimated by the researcher based on NCSO reports.

Figures in parenthesis are NCSO data. 6

Sources: 1984 NEDA Statistical Yearbook; and NCSO, Report on Population.

10-year period. The improvements in education of Tondo residents from 1974 to 1984 could stem from the establishment of a high school and the upgrading of elementary schools in the area. The 59.2 percent increase in those who entered high school between 1974 and 1984, when converted into monetary terms, means that each of these individuals could have annual earnings of about P4,903 (see Table 5). This amount is about 60 percent higher than the earnings of individuals who did not go to high school after elementary school (G. Psacharopoulos 1973 and 1980). With increases in the proportion of residents having high school education, chances of having more permanent jobs and higher levels of income in the future becomes greater. As a whole, the development project could be said to have caused an impact in Tondo's residents' education.

Perceived Community Problems

Table 2 shows that the category "basic facilities" is not significantly different in both periods, i.e., the basic facilities problem is still considered a major community problem by Tondo residents in spite of the improvements made. This could mean that the standards of living of Tondo residents in 1984 is higher than in 1974 and that better quality facilities could have become a concern. The categories "physical infrastructure", "physical environment", "social infrastructure" and "landownership" are significantly different: 1974 shows higher proportions than 1984. This suggests that there is a higher priority given to basic needs in 1974 than in 1984 and could arise from poor housing and community facilities before project implementation. This is supported by the findings on "economic crisis" and "peace and

Table 4. Metro Manila's Elementary and High School Yearly Enrolment (1974-84), Tondo's Elementary and High School Enrolment for 1974 and 1984 and Percentage of Schooling Members Who Continue Going to High School After Elementary School

	Metro	Tondo Foreshore				
Year 	Elementary School (S _p)	High School (S _s)	$\frac{S_n}{S_p}$ (100)	Elementary School (S _p)	High School (S _o)	$\frac{S_n}{S_p}$ (100)
1974	742,843	329,125	53%	2,946	1,106	37.5%
1975	760,958	400,829	57	NAb	NA	NA
1976	783,890	444,133	57	NA	NA	NA
1977	802,237	467,204	58	NA	NA	NA
1978	864,078	492,013	57	NA	NA	NA
1979	868,046	451,709	52	NA	NA	NA
1981	874,844	471,936	54	NA	NA	NA
1982°	1,026,652	508,843	50	NA	NA	NA
1983°	1,073,706	525,167	49	NA	NA	ŇΑ
1984ª	1,120,763	541,491	48	30	29	96.7

[&]quot;The researcher's projections excluded 1980 figures because of a large deviation from the other statistics on yearly enrolment. This was assumed to have been a misprint in the Ministry of Education, Culture and Sports (MECS) Report.

Sources: MECS, Philippine Enrolment Projection Program; NHA/TFDA, Socioeconomic Survey Report: Tondo Foreshore Urban Renewal and Resettlement Project, 1974.

^bNA - Not Available.

0

Table 5. Annual Absolute and Relative Wages Earned by Filipinos According to Educational Attainment for 1967, 1976, 1977 and 1978

Level of		Absolute	Wages (P)			Relativ	e Wage	s
Education	1967*	1976	1977b	1978 ^b	1967	1976	1977	1978
No Grade Completed (S _n)	P1,157.36	P2,553.00	P2,956.72	P2,929.96	2.03	1.00	1.11	1.05 <u>S</u>
Elementary Graduate (S _p)	2,353.80	2,556.00	3,281.92	3,073.36	1.06	1.58	1.48	1.60 S ₁
High School Graduate (S _s)	3,7770.6	4,039.44	4,863.28	4,903.68	1.41	1.26	1.29	1.25 <u>S.</u> S
Undergraduate (S _u)	5,309.78	5,080.48	6,276.40	6,148.20		_		-

^aFigures taken from G. Psacharopoulos' study on "Return to Education", 1973.

Table 6. Mortality Rates Due to Pneumonia per 100,000 Population (Tondo, Manila/Metro Manila and Philippines, 1974-79)

Year	Tondo (N=53)	Manila Metro Manila	Philippines
1974	195.9	69.2	110.7 (112.6) ^b
1975	NAc	57.4	103.3
1976	NA	137.0	109.1
1977	NA	152.7	106.5
1978	NA	124.3	99.9
1979	NA	126.8	104.2
1984	808.6	(219.2)	89.3

^aData for 1974 holds only for the city of Manila.

Sources: 1974 to 1979 data on Manila/Metro Manila and the Philippines - National Census and Statistics Office, 1970-79 Report on Major Causes of Deaths; 1974 data on Tondo - National Housing Authority, NHA/TFDA Socioeconomic Survey Report: Tondo Foreshore Urban Renewal and Resettlement Project, 1974; 1984 data on the Philippines - The International Nursing Foundation of Japan, Nursing in the World, 2nd Edition, 1985.

^bBasic data taken from the 1981 Report of the Ministry of Labor and Employment, Philippines.

^bFigures in parenthesis are researcher's projection estimates.

cNA - Not Available.

order", social relationships" categories which show significantly higher proportions in 1984 and in 1974. The findings support the study's hypothesis in that a development project could induce a shift in perception of community problems from survival needs to lesser needs.

Health

The health conditions of Tondo Foreshore area before and after project implementation have been examined in terms of mortality rates due to pneumonia. Table 6 shows that Manila and the Philippines have much lower rates than Tondo and while the pneumonia death rate for the Philippines decreased in 1984, the pneumonia death rate for Tondo increased in the same year. The findings show a mortality rate of 806.6 per 100,000 population for Tondo in 1984 and the ratio between Tondo and Metro Manila for the same year is 3.7:1 For 1974, the ratio between Tondo and Manila City is 2.8:1. Overall, there is an increase in mortality rates of Tondo within a 10-year period and could probably stem from an ineffectiveness of the health programs carried out by the project.

Conclusions and Recommendations

The findings show that Tondo Foreshore residents experienced some improvements in their socioeconomic situation, i.e., increases in income levels, school enrollment, proportions of schooling members who go to high school after elementary school, and a shift in perception of community problems for basic needs to lesser needs. These support the study's hypothesis in that a development project could bring about improvements in the living conditions of the residents. On the other hand, a worsening of conditions with respect to savings and health were observed. Though this could be a pattern brought about by the economic crisis that gripped the country in the early 1980s, these findings do not support the study's postulates regarding improvements in the savings patterns and health conditions of residents owing to a development project.

Overall, an evaluation of housing development projects in the light of their

socioeconomic impacts after project implementation could be said to give a more realistic and comprehensive picture of the conditions of the areas than the conventional cost-benefit method of analysis. Socioeconomic impact studies of this type are recommended not only for the Philippines but also for other countries because they can better guide the countries' urban development scheme. addition, this method could be applied to the evaluation of other types of urban development projects like transportation, social infrastructure and utilities projects for a better idea of how planning policies can be further improved.

Notes

This article originally appeared in the previous issue of the Philippine Sociological Review (Vol 34, Nos. 1-4). Several errors, particularly in the tables, were found in the earlier article, and we thought it best to publish a corrected version rather than append an errata. - Editor.

The author is indebted to Dr. Koichi Mera and Tony E. Smith, Mr. P. H. Tan and Prof R. Alonzo for valuable suggestions. She acknowledges the National Housing Authority of the Philippines and Ms. V. Loanzon for relevant materials. This study was partly funded by the Ministry of Education of Japan. The views expressed herein are the author's own.

'Source were the National Housing Authority (NHA) and V. Loanzon's masteral thesis.

²Public goods are non-rival and non-exclusable goods and services which have characteristics of lumpiness at low marginal costs. These are free or subsidized goods and services usually provided by the government.

³A housing development project usually aims for the upgrading of the living conditions of families aside from individual persons. Thus, the survey was done according to households rather than sole individuals.

⁴The 137-hectare reclaimed land of Tondo Foreshore housing development project was divided into five major areas by NHA. These five areas were randomly picked by the author e.g., the number of times an area was picked corresponds to the number of households interviewed in that area. The random sampling results were as follows: Area 1 had 38 households, Area 2 had 25 households, Area 3 had 42 households, Area 4 had 31 households and Area 5 had 34 households.

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Republic of the Philippires Ministry of Transportation and Communications BUREAU OF POSTS NATIONAL CAPITAL REGION Manila 2801

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editor/business manager/owner/publisher of PHILIPPINE SOCIOLOGICAL REVIEW (Title of publication) published Bi annually frequency
(Title of publication) published Bi annually frequency
of issue in English and Filipino (language in which printed) at Ateneo de Manila University, Q.C. (Office of publication) after having
been duly sworn to in accordance with law, hereby submits the follo-
wing statement of ownership, management, circulation etc. which is
required by Act 2580, as amended by Commonwealth Act No. 201.
NAME ADDRESS
Editor RICARDO G. ABAD Ateneo de Manila University, Q.C.
Managing Editor Business Manager PSSC Central Subscription Service, PSSCenter, M. Marcos Ave., Q.C. Owner Philippine Sociological Society Ateneo de Manila University, Q.C.
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Publisher Philippine Sociological Society Ateneo de Manila University, Q.C.
Printer Atenno de Manila University Press Lovola Helghts, U.U.
Office of public PSSC Central Subscription Service PSSCenter, M. Marcos Ave., Diliman, Q.C.
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