
Chapter 16

Evaluating the Benefits and Costs of Resettlement Projects - A Case Study in the Philippines

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Abstract. *The efficiency and impact of two types of resettlement modes undertaken by the Philippine National Housing Authority are compared. Production efficiency was measured from the cost/benefit ratio (CBR) of the present value of the total project cost and estimated housing rental values of specific resettlement projects developed from 2004 to 2011. The socioeconomic impact analysis involved a small sample of households, matched based on household characteristics using propensity matching. Results show that the use of government resources in in-city developments is more efficient: for in-city projects the government spends from ₱0.62–₱0.76 for every peso of housing benefit; for off-city projects, the benefit is an estimated CBR of ₱1.72. The study noted that the initial gains of off-city resettlements—lower investment and administrative costs, and the provision of a house-and-lot package to affected families—are erased by compromises on the quality and sustainability of resettlement sites. The household income of resettled families is lower, and participation in the schooling of children is also lower in off-city sites. The government must prioritize in-city resettlement through longer-term planning, and consider alternative in-city housing options*

for affected families. It should also review policies on off-city resettlements, specifically the selection of sites and the extent of involvement of the community in resettlement planning.

The rapid pace of urbanization in the Philippines has led to housing challenges that are visibly manifested in poor housing conditions. In 2015, it was estimated that about 18 percent of the total population was living in blighted conditions. Poor housing is most evident in cities, specifically the capital city of metropolitan Manila, which is home to about 2 million slum dwellers. This condition is as much the result of unplanned urban growth as it is of low income levels. In general, the country lacks integrated urban planning, and there is poor coordination between spatial and structural transformation in cities (World Bank 2016). A result of this unplanned growth is haphazard land development, during which the illegal occupation and conversion into residential settlements of land for public use is commonly observed. Over time, there has been a proliferation of these illegal residential settlements (also known as “informal settlements”), and an increase in the number of families occupying them.

This condition has constrained the government to build the critical infrastructure needed for effective and efficient urban services. Metro Manila was among the world’s top 20 most populous megacities in 2015, but despite rapid urbanization, the city has not benefited much in terms of economic growth and poverty reduction, compared to other Asian countries (World Bank 2016). The city has poor connectivity with peripheral towns and cities, and even within Metro Manila there are areas outside of the main transit routes, or areas not linked to citywide social services and infrastructure.

In the last two decades, the Philippine government has put into action an infrastructure plan to address these inefficiencies. In particular, the plan identified expressways, railroads, and a flood control system as the major infrastructure projects for the expanding Metro Manila region. These projects are expected to involve massive relocation and urban renewal in some parts of the city: involuntary resettlements thus are unavoidable.

The Philippine policy and institutional framework for dealing with involuntary resettlement provides for humane procedures for relocation and resettlement. Affected communities are engaged in a consultative process that covers housing options, government resources, livelihood support, and the protection of vulnerable persons. However, resettlement action plans have been primarily focused on providing housing, and often have failed to account for the loss of incomes and the social networks of households. Oftentimes, the government tends to look at resettlement in terms of short-term results: that is, how to move out affected families and provide them with permanent homes in the shortest time and at the least expense. This action tends to favor off-city resettlement, given the tedious process of searching for adequate land to fit the large number of affected families, and the limited availability of low-priced land in the city. Moreover, providing affected families with their own houses and lots seems to present a better picture than housing them in urban, multistory buildings.

However, the lower initial cost and house-and-lot package in off-city resettlements do not necessarily result in a cost-effective government investment compared to the cost of in-city projects. Off-city projects can be counterproductive, since the displacement of families has an impact on their livelihoods and other economic opportunities, as well as on their social networks and psychological well-being, their access to basic services, and their opportunities for skills development. In other words, the initial gains from off-city resettlement projects can have adverse effects on families' overall welfare.

In cases where off-city resettlement cannot be avoided, the provision of adequate basic infrastructure in the resettlement area must be ensured prior to relocation. Resettlement sites should also at least be in municipalities identified as subregional or provincial urban centers, and not in rural municipalities where economic opportunities are scarce. The inadequate basic infrastructure and lack of opportunities for jobs and livelihood is the main problem for off-city resettlements in the country: many of the involuntarily displaced people end up returning to the city after their resettlement.

This study provides a quantitative methodology for assessing the benefits and costs of resettlement projects that are implemented by the national government. Specifically, it compares two resettlement modes—in-city and off-city—and determines which mode provides the greater efficiency and the best social and economic outcomes.

The analysis considers resettlement projects of the National Housing Authority (NHA), the central government agency in the Philippines mandated to undertake housing production for families in the lowest 30 percent of income. The NHA is the lead agency in the resettlement of families affected by infrastructure projects of the national government: between 2003 and 2012, it has carried out massive resettlement of families for the proposed construction of the North and South Rail infrastructure project, which will link Metro Manila to peripheral towns and cities. This period has also coincided with the resettlement of families living along riverbanks, to address the flooding problem in Metro Manila.

The first section of this chapter provides an overview of NHA resettlement modalities and processes during this period. The second section presents the methodology used to evaluate the efficiency and impact of NHA off-city and in-city resettlement projects. The following section discusses the results of the efficiency and welfare analysis, comparing in-city and off-city projects. The final section presents conclusions and provides recommendations.

RESETTLEMENT MODALITY: PROCESS AND PROCEDURES¹

The NHA classifies resettlement projects into either in-city or off-city projects. In-city projects refer to resettlement sites that are developed in the same city or municipality where the affected families reside. Off-city projects refer to resettlement sites outside of the original settlement. Off-city resettlement

¹This section draws on Ballesteros and Egana (2013).

areas are usually in distant locations, about 40–50 kilometers from the original settlement.

In off-site settlements, individual houses and lots can be provided, due to the availability of large areas of contiguous low-priced land. Resettlement sites within Metro Manila are smaller plots that entail the construction of multistory housing, with a higher density population. Multistory development also requires higher investment and maintenance costs, which means a higher per-unit cost of housing, and is usually unaffordable for most families residing in informal settlements. Under the North and South Rail Project, affected families in Metro Manila were mostly resettled outside of the city.

The success of a resettlement project is to a large extent dependent on how well it is implemented. The NHA adheres to a humane approach to resettlement. It carries out the resettlement process in several phases, during which social preparation is the central activity. Social preparation involves identifying beneficiaries and resettlement sites, and mobilizing resources. Affected families are organized, and the community goes through a capacity-building process in order to establish the social, organizational, and institutional norms and mechanisms that will enable resettled families to cope with their relocation, and encourage them to work together in partnership with concerned institutions and stakeholders. This activity covers two phases of the NHA's resettlement work program. It is the most critical stage in the resettlement process, since it involves the buy-in of both the community and the proposed resettlement sites, the involvement of several stakeholders, and the creation of committees and subcommittees at the level of the local government and the community. It also requires the longest time, because the NHA has to formalize agreements with both the sending and receiving local government units (LGUs), the community, and the developer. While this entire phase is programmed to be accomplished within three to six months for 1,000 affected families, delays often occur, due to the number of stakeholders involved in the preparatory work. There can also be prolonged resistance, or disagreements among the affected families. Often a longer consultation period is needed in order to resolve collective action and/or coordination problems with the government and other entities.

The NHA primarily applies the developer-constructed approach to resettlement projects.² Under this approach, the NHA partners with private developers to undertake the development of resettlement sites and the construction of housing, based on standards of socialized housing.³ The NHA

² An alternative approach is the housing material loan, which is an incremental housing approach whereby NHA provides the developed site with core housing (i.e., a box house), and beneficiaries take charge of housing improvements based on their affordability level. Although this approach has been observed to have better outcomes, it is not popular with the NHA: the agency finds it tedious both administratively and physically, since it has to be concerned with the process of material acquisition and housing construction as well (Ballesteros and Egana 2013).

³ Socialized housing refers to housing projects for the underprivileged and homeless, following the national law *Batas Pambansa 220* on subdivision development

accredits the developer, who then provides a list of proposed resettlement sites, with approved development permits and locational clearance, and the pricing of the housing units.⁴ This approach is administratively less costly to the NHA, since the agency does not have to engage in land banking, and simply contracts the private developer to supply the developed site and housing units. On the other hand, there is incentive for the private developer to engage in the project because of the captive market. The developer does not have to look for buyers for each unit, since the entire development is being purchased by the NHA for the beneficiaries of its resettlement program. The private developer can also use the resettlement project for compliance with the Balanced Housing Development Act, which requires developers of proposed subdivision projects to develop an area of socialized housing equivalent to 20 percent of the total area, or the total cost, of proposed projects.⁵

Upon accreditation by the NHA, the developer offers the community the site, and schedules site visits for community officers. The community officers have to formally endorse the project to the Local Inter Agency Committee (LIAC), which in turn endorses the project to the NHA.⁶ The endorsement from the community, and the recommendation of the LIAC, enables the NHA to finance and purchase the housing units for each community member from the selected developer.

It is important to note that the community can select only projects offered by NHA-accredited developers, which in most cases might just be a choice of two sites from one developer, or two sites from two different developers. Moreover, although the NHA provides the criteria on site suitability for resettlement projects, the endorsement of the LGU, based on the approved subdivision plan and locational clearance, is sufficient for the NHA. However, the approved subdivision plan considers only the land use and environmental

standards and price ceilings, as determined by the Housing and Urban Development Coordinating Council and the National Economic Development Authority. During the period in review, the price ceiling for socialized housing was set at ₱400,000 per housing unit, which is usually applied in highly urbanized areas. In towns and municipalities, the NHA sets a lower price as determined by its board.

⁴ The development permit and locational clearance are certifications issued by the LGU that verify a specific site for residential use and suitable for residential subdivision development.

⁵ Urban Development and Housing Act (RA 279 of 1990). The developer may partner with other developers to invest in these projects.

⁶ The LIAC is formed at the start of the resettlement process. The members consist of representatives from the sending LGUs, local nongovernmental organizations, and representatives of national government offices (e.g., the Department of Interior and Local Government, the Housing and Urban Development and Coordinating Council, the Department of Social Welfare and Development, the Department of Environment and Natural Resources, the Department of Public Works and Highways, the NHA, the National Poverty Commission, the Metro Manila Commission, and the Presidential Commission for the Urban Poor). The LIAC is chaired by the local housing board representative and cochaired by the NHA.

suitability of the site: it does not include the socioeconomic feasibility of the area, such as conditions of employment (e.g., distance to employment centers); access to schools, markets, and tertiary hospitals; or distance of the site to energized sources of water and power. The NHA argues that social services (e.g., schools, health centers, etc.) can be provided over time, and that the concerned national agencies should include the construction of social facilities for resettlement sites in their respective budgets. As to basic utilities such as water and power, the NHA simply requires the selected developer to provide shallow wells and power generators in areas that are far from energized sources.

After social preparation is completed and the approval of the site has been obtained from community officers and LIAC, the relocation of affected families follows. The relocation phase starts when the NHA, the community officers, and the developer have signed contract agreements. This phase involves preparatory work such as a period of dismantling structures at the evacuated sights, and preparation for staging areas if needed. In most cases, the site has been prepared prior to relocation, except for the individual power and water connections, which are usually provided at a later period. Upon completion of the preparatory activities, the actual relocation usually takes about a month for 1,000 beneficiaries (an average relocation rate of 50 families per day). Weather conditions can slow down the process. There are relocation guidelines that must be followed. The NHA and representatives from the Philippine Commission on Human Rights, and the Presidential Commission for the Urban Poor ensure that relocations are undertaken within the legal guidelines. The NHA takes the lead in relocation activities, with support from the sending LGU. The sending LGU also provides financial assistance of not less than ₱1,000 per family. Some sending LGUs, especially in more prosperous cities, provide additional compensation, such as a week's supply of groceries and/or the extension of health privileges to their former constituents for a period of one year. At the resettlement site, the relocated families are received by the NHA local office, and the assigned community representatives.

The post-relocation phase starts with the termination of the relocation operation, and turnover of the evacuated sites to the concerned government agency—usually the Department of Public Works and Highways, or the Philippine National Construction Corporation, or the Philippine National railways. The developer has to also turn the resettlement project over to the NHA and the community. The resettlement process is deemed completed at this stage.

Once a site has been approved for resettlement, the developer is only responsible for the site development, and for the construction of core housing. The developer is not responsible for the construction of community facilities, or for the installation of water and power services to individual households.⁷ In off-site areas that are far from energized sources of water and power, developers are only required to provide bulk water facilities

⁷ Utility companies usually require 90 percent occupancy of subdivisions prior to connections.

sourced from shallow wells, and from generators for power supply. These facilities have to be maintained by the community and the NHA upon turnover of the resettlement project. While shallow wells and generators are considered stopgap or temporary measures, the community may have to wait several months or even more than a year before they can be connected to the local water or power systems. Meanwhile, these resettlement areas have to bear the higher cost, and less effective water and power systems, compared to households that have access to the local water districts and power lines.

Table 16.1 shows the status of in-city and off-city resettlement sites for the affected families of the North and South Rail Project. Upon relocation, in-city resettlement sites are provided with basic infrastructure facilities and improved houses made of strong materials. In off-city resettlement sites, although all affected families are provided with a house and a lot, and with better subdivision roads and houses made of stronger materials, basic services—that is, water and power—are not fully available upon relocation. In some completed sites, access to water and power are rationed, and are only available at specific times. There are also cases when some of the shallow wells are not operational, due to water potability. The NHA has not been able to readily address this situation, due to the high cost of energizing the sites, the limited budget of the agency, and the low income levels of families in the resettlement site. The installation of additional generators and water pumps would require a higher subsidy per family. On top of this subsidy, the NHA has to subsidize the maintenance of these machines. The sites may eventually be further improved, but these improvements depend on the availability of funds from the NHA, or grants from local politicians or external funders.

The NHA has established an estate management office in each of the resettlement areas, but their duties are mainly focused on loan collection and monitoring.⁸ The NHA considers the resettlement program as a cost-recoverable program in which beneficiaries share in the cost of the development by paying for the cost of housing unit and lot over time. The site development cost is part of the government subsidy, while the cost of housing, including the lot, is a loan to each family that is paid for on a monthly basis over a period of 30 years. NHA collection performance, however, has historically been low, with an average collection rate of only 30 percent. This is one reason why the NHA has not been able to disengage from resettlement sites, as these sites remain assets of the agency unless they are fully paid for by the community. Moreover, the NHA has not been able to turn over the common areas of resettlement sites to the host LGUs. LGUs usually treat these sites as NHA properties, and are not keen to take on the responsibility for maintenance of common areas and utilities. There are several reasons why this is so: one, LGUs usually do not generate real property taxes from these areas; two, there could be development problems, such as landslides, maintenance of

⁸ The NHA's monitoring and evaluation system is limited to occupancy and collection performance of resettled families. There are no systematic records on whether the resettled families have left the area or whether the housing has been transferred or sold to current occupants.

TABLE 16.1 Summary status of resettlement projects for affected families in Metro Manila, North and South Rail Infrastructure Program (as of 2016)

Resettlement site	Land area (hectares)	No. of developed sites	Lots generated	No. of occupant families	Sites completed		Status of power and water connection in completed sites 6 months after relocation
					No.	% of developed sites	
All	798.33	45	113,357	106,869	30	71.0	
Metro Manila	85.09	6	13,313	12,941	6	100.0	
Bulacan (off-site)	181.61	14	27,497	27,236	10	71.0	Two sites with no local power and water connection; two sites with no local water connection; water supply from shallow wells, but not all are functional; in some completed sites, there are portions with no water connection, affecting some 1,853 households
Pampanga (off-site)	203.70	6	13,198	12,903	6	100.0	In some completed sites, 600 households with no local power and water connection
Laguna (off-site)	181.92	9	35,402	32,091	4	44.0	In some completed sites, some shallow wells are not functional; others rely on commercial water distributor
Cavite (off-site)	24.25	2	4,117	3,861	1	50.0	Some shallow wells not functional
Rizal (off-site)	121.76	8	19,830	17,837	5	63.0	Some completed sites have bulk metering

SOURCE: NHA North South Rail Project Report 2014; focus group discussions.

NOTE: Developed sites are sites turned over by developers to the NHA, and considered ready for relocation. Completed sites are developed sites that have been turned over to beneficiary households; land development and housing construction is completed, and households have local power and water connection.

water and power systems, and weak community ownership of the area; three, some off-site resettlement sites are located in fourth or fifth-class municipalities that do not have enough funds to support the social services needed by the communities and the new settlers in the short to medium term, and therefore the LGUs require continued support from the NHA.

METHODOLOGY

The study used both efficiency and welfare measures to compare the two resettlement modes—in-city and off-city—that were undertaken by the NHA in cases of involuntary resettlement in Metro Manila.

To measure the efficiency of government investments for in-city and off-city resettlement projects, cost/benefit ratios (CBRs) were derived, based on estimated present values of the total costs of housing provision and the expected returns on the investment. This method captures the production efficiency in the use of government resources (Olsen 2000). The cost data were obtained from NHA records that include data on production, financing, and maintenance costs of specific in-city and off-city projects. The benefits were derived from the estimated value of market rents of housing in the location. The analysis assumes that the housing investment has a useful life of 30 years.⁹

In addition to comparing efficiency, the human welfare effects of in-city and off-city resettlement projects were also measured, using small-sample analysis of affected families. The data were obtained from the socioeconomic survey funded through the Social Impact Monitoring Project of the World Bank in 2010. The surveyed families were resettled families who had previously been living along the waterways of the Tullahan and Pasig Rivers, and were victims of Typhoon Ondoy (Typhoon Ketsana) in 2009. These families were initially moved to evacuation centers after their houses were washed out by the typhoon. The NHA, with assistance from the local housing board, selected from the list of evacuated families those who would be resettled in NHA resettlement sites in-city or off-city.

A total of 180 sample households was surveyed in the two sites; 100 households in the off-site resettlement in the province of Laguna (about 65 kilometers from Metro Manila), and 80 households that were resettled in a site in Pasig City, in the eastern part of Metro Manila. The 180 sample households were matched using household characteristics that were not affected by the resettlement project (e.g., age and educational level of the head of household, average household size before resettlement, etc.). The propensity-score matching performed on the sample households resulted in 163 matched households. Regression analysis on the matched households was used to determine differences in pre-identified outcome variables such as

⁹ Socialized housing, given the type of building materials used, has a lower useful life than regular housing, which is estimated to have a useful life of between 50 and 70 years.

monthly household income and expenditures, school attendance of children, health status, and the employment of women.

COMPARISON OF IN-CITY AND OFF-CITY RESETTLEMENT: EFFICIENCY AND WELFARE IMPACT

Production Efficiency of Resettlement Projects

Table 16.2 compares production efficiency in the use of government resources for in-city and off-city resettlement projects. The cost components include both the investment costs and the operating and maintenance costs (including interest subsidies) that the NHA or the government incurs in the management of the resettlement site. Note that under the resettlement program, the NHA purchases the developed lots and housing from developers, and the beneficiaries amortize to the NHA the purchase price of the house and lot unit at a subsidized interest rate for a maximum period of 30 years. The benefit or return on the investment is the estimated imputed rents of the housing over a period of 30 years.

Based on recent NHA resettlement projects for Metro Manila, the cost of housing in off-city sites is only about ₱348,000 per unit compared to ₱917,640 per unit for in-city projects. The cost difference is due to the higher land prices and higher construction costs for multistory buildings for in-city projects. On the other hand, while off-city projects have lower land prices, these projects incur additional costs for the construction of community facilities. Controlling for size of resettlement and period of construction, resettlement sites in Metro Manila actually incur lower expenditures for community facilities, since schools, health centers, and livelihood infrastructures (e.g., markets) are already existing in the area, and are accessible to the community. Moreover, the community can readily connect to the local water and power districts, since the site is within the energized area. The households also remain constituents of the same city or municipality: thus they are already known by the LGU and are included as recipients of local services.

For off-site settlements, the total project development cost is lower, but this advantage is erased by additional investments in both physical and social infrastructures. Aside from government subsidies on the house-and-lot packages, resettled families are also given a housing subsidy that includes the utilities' expenses for installing power and water in the area, either by the provision of shallow wells or power generators, or as advance payment to utility companies to facilitate individual household connections.¹⁰ In addition, resettled families are provided with a livelihood subsidy in the form of physical infrastructure and skills training programs. The infrastructure to support livelihoods includes capital outlays for the construction of livelihood facilities such as livelihood centers, tricycles, jeepneys, transport sheds, and/or market

¹⁰ Deep wells are installed in areas that are not yet served by existing local water systems, and generators are provided for temporary power utilities.

TABLE 16.2 Cost/benefit ratio: selected NHA resettlement projects

Cost item	Manila: in-city (multistory)	Caloocan: in-city (H&L)	Trece, Cavite: off-city (H&L)
Total project cost/unit	917,640	203,346	146,942
H+L cost/unit	841,667	172,107	113,183
School building (for 1,000 units; 15 classrooms, 3-story)	—	23,000	23,000
Total investment cost	917,640	226,346	169,942
Other costs			
Interest subsidy on interest-free housing loan component, PV 30 years	151,974	34,715	34,715
O&M, 5% of investment cost for multistory; 1% for H&L, PV 30 years, 8%	9,176	2,263	1,699
PV O&M	516,530	25,482	19,132
MOOE and PS of school = P14,09/year, PV 30 years, 8%		15,862	15,862
Livelihood program, noninfrastructure (one time)		3,000	3,000
Total interest and operating subsidy	668,504	79,059	72,709
Total cost, PV	1,586,144	305,405	242,651
Market rent, PV 30 years; 8%	2,081,667	493,667	141,392
CBR: total cost/market rent	0.76	0.62	1.72
CBR: total investment cost/market rent	0.44	0.46	1.20
CBR: total cost/market rent (assumes gov't owns land at end of 30-year period)	0.47	0.32	0.81

NOTE: Costs are in P per unit or household; H&L = house and lot; MOE = maintenance and operational expenses; O&M = operating and maintenance; PS = personnel services; PV = present value. Investment costs for different construction years adjusted for comparability based on inflation. Market rent is based on average rental rates from the 2009 Family Income and Expenditure Survey and rental rate index of 0.08 in Metro Manila and 0.04 in provinces. Land values increase using regional consumer price index.

talipapa centers.¹¹ On the other hand, for skills training, the NHA allocates about ₱3,000 per beneficiary household to link the resettled communities to skills training, job placement, scholarship programs, and livelihood-based projects, including credit or loan assistance from other national government agencies. However, the NHA does not monitor whether these trainings and facilitation activities result in actual employment or livelihood.

In terms of benefits, while off-city projects are designed as house-and-lot packages, the value of the housing units measured in terms of housing rental value is much less than the in-city housing, especially since the sites are often located in third or fourth income-class municipalities.

The results of the CBR analysis show that in-city developments, specifically resettlements in Metro Manila, are more cost-effective. It costs the government less than one peso (between ₱0.76 and ₱0.62) to produce one peso of housing benefits in Metro Manila. In off-city sites, the cost exceeds the benefit, based on a CBR of ₱1.72. This implies that in the long term, the return on investment is negative. The benefit is higher for in-city housing because of the higher economic value of the property after development. Off-city locations have a lower rental value, because these sites are usually outside the city or town centers, and in lower-income municipalities. The cost effectiveness of the projects is thus affected by the economic potential of the area as well as the value that beneficiaries attach to the resettlement housing.

Considering that after the 30-year lifespan of the housing unit, the NHA usually retains the land, given the low loan repayment performance of beneficiaries, the value of the retained asset becomes part of the benefit from the investment. Land values are assumed to increase over time, thus the CBR is lower when the value of the land is considered.

The Socioeconomic Impact of In-City versus Off-City Resettlement

The results of the welfare analysis show that off-city relocation distances people from livelihood, and pushes them into poverty. The income of the off-city relocated households is lower by about ₱3,000 after adjusting for cost-of-living differences (table 16.3). The reduced expenditure on basic needs (food, water, electricity) of households in off-city resettlement implies deepening food insecurity, and could be a coping mechanism to deal with a reduction in income and a change in the nature of employment.

On the other hand, health expenditures appear to have increased, although the result is not statistically significant. The lower transportation costs may reflect changes in employment. While there is no significant difference in the proportion of employed households, there are significantly more women employed in the off-city relocation sites. This change indicates that women may have taken on domestic jobs, or livelihood projects (e.g.,

¹¹ These are informal wet markets housed on temporary structures made of mixed materials (wood and salvage materials).

TABLE 16.3 Results of socioeconomic analysis (based on small-sample analysis)

Variable	Off-city	In-city	Difference (off-city-in-city)	p value	Significance
Average monthly household income	7,456.4586	10,602.9494	-3,146.4908	0.000	***
Average household expenditure	5,882.0586	9,972.5556	-4,090.4971	0.000	***
Average household savings	1,574.4000	630.3937	944.0063	0.224	n.s
Average household expenditure: food	3,336.4924	5,064.2564	-1,727.7641	0.000	***
Average household expenditure: transportation	709.2988	793.3841	-84.0852	0.530	n.s
Average household expenditure: water	206.4023	332.3209	-125.9186	0.000	***
Average household expenditure: electricity	387.6078	705.6084	-318.0006	0.000	***
Average household expenditure: medicine	202.2216	125.1561	77.0655	0.324	n.s
Proportion of household members (age 6-22) attending school	0.2758	0.3482	-0.0724	0.038	**
Proportion of employed household members	0.3716	0.3312	0.0403	0.185	n.s
Proportion of employed household members: men	0.4728	0.5537	-0.0808	0.158	n.s
Proportion of employed household members: women	0.3415	0.2248	0.1167	0.028	**

SOURCE: Socioeconomic Survey of Resettled Families Social Impact Monitoring Project, World Bank.

NOTE: n.s. = not significant; *** significant at alpha = 1%; ** significant at alpha = 5%; * significant at alpha = 10%. Adjusted for cost-of-living differences using the Consumer Price Index. All expenditure values are in P. Used propensity matching to come up with comparable households; sample size = 163 matched households.

sari-sari stores), while the men are still looking for jobs in nearby areas. There are cases where the employed family member rents space in other informal settlements in the city and goes home to the family only during weekends or holidays.

A disruption in education was also noted in the off-city sites. The proportion of school-age children (6–22 years old) has dropped, despite the construction of new schools in the area. One possible explanation is that the new schools may not adequately serve the students, since the resettlement schools are considered satellite classes of regular Department of Education employees, and there are several cases of a reported absence of teachers in the area. It may take time for the Department of Education to hire additional teachers for these new schools, and given the already high student/teacher ratio in the public schools, the additional load for teachers further compromises the quality of education. The results also indicate dissipation in community social capital, from high community involvement to lower interest in participating.

This has also been observed in the case of health centers. A community volunteer usually stays in these clinics, mainly to dispense over-the-counter medicines.

CONCLUSIONS AND RECOMMENDATIONS

Both off-city and in-city resettlements are meant to improve the housing conditions of resettled families, and both should be welfare-enhancing. However, this study has shown that badly planned off-city resettlements are costly, and actually reduce the well-being of resettled families. Compared to in-city resettlement, government resources are not used efficiently in off-city resettlement. In the long term, the government may even have to spend more for off-city resettlement, since the resource requirements in terms of social and physical infrastructures tend to rise exponentially the greater the distance to the relocation site from the original site, or from the city proper. Moreover, the adverse impact on welfare refers not only to reduced income, but also to lower participation of school-age children in schooling, and increases the responsibility of women to earn needed income for the family.

Off-city resettlements are often hastily undertaken, and are located in marginalized areas, far from livelihood and employment facilities. While affected families are provided with houses and lots, there are compromises in the quality of the developments. These areas are also far from sources of water and power; thus resettlement sites are often deficient in basic services. In other words, the objective of expediency rather than efficiency and effectiveness has dominated the choice in the construction of these resettlement sites, and has adversely affected the welfare of resettled families in off-city sites.

A policy that advocates for in-city resettlement is far superior to off-city resettlement. The initial investment is high, but the socioeconomic outcomes are better. Problems of poor maintenance of multistory housing can be addressed through better estate management, while land costs can be minimized through lease arrangements or rental housing options. Income-based

subsidies for the costs of the housing units should also be explored by the government.

In cases where off-city resettlements are inevitable, the government must improve the choice of resettlement sites, and explore an incremental housing strategy in which the households and communities are more involved in the construction of the housing and in community development.

The results of this case study have revealed policy shortfalls, and also how the policy—and compliance with the policy—needs to be strengthened. This study also highlights the need for an inclusive urbanization process, so that negative externalities can be minimized and the marginalized people are not made to suffer the impacts of development.

There is also much to learn from a social impact assessment of resettlement projects, specifically how households, and/or the community and the government, can undertake the reconstruction process in such a way as to restore economic and social well-being. The NHA has resettled more than 100,000 families in infrastructure development projects in the last 10 years alone. Involuntary resettlements are expected to continue under the current administration's accelerated infrastructure spending in the medium term.

This case study supports other, qualitative studies that were undertaken to assess the socioeconomic conditions of households in various NHA resettlement sites. Impact evaluation of housing programs in the country has been constrained by data limitations: thus, many of the assessments of resettlement housing have dealt mostly with implementation issues, activities, and inputs. The current approach provides more rigorous analysis of resettlement impact. While it was based on small-sample estimates, the methodology can be applied to larger samples for more robust results.

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