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The Cost of Misguided Urbanization: The Case of Informal Settlements in Butuan City, Philippines

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Abstract

The informal settlements in Butuan City, Philippines pose the intractable problem of housing and providing services for the urban poor. They exact tremendous costs to government infrastructure projects and the city as a whole. In this study, these costs are accounted for, particularly the costs the government will incur to compensate them for being displaced in the implementation of public infrastructure project. Primary data were collected through inventory of losses (IOL), socio-economic survey (SES) and the replacement cost surveys. Secondary data were obtained through key informant interviews with different stakeholders. The paper quantifies the costs of compensating them thru replacement of their affected resources and providing resettlement. It also establishes different types of compensation to secure just terms for all parties. It presents a rich picture of how the informal settlers affect urban environment and the monetary and operational challenges they pose to the government and the society at large.

Keywords: Informal Settlements, Social Cost, Urbanization

1. Introduction

1.1 Background of the Study

The occurrence of flooding in Butuan City, Philippines exacts a heavy toll in terms of economic and physical losses. To respond to this problem, a drainage improvement project was implemented to reduce the incidence of flooding within the city. This project was covered by the Butuan City Drainage Improvement Project (BCDIP) Phase 1, a sub-project of Agusan River Basin Integrated Water Resources Management Program (ARBIWRMP).

However, the intervention resulted in some involuntary displacement of 175 informal settlers as potentially affected households (PAHs). Against this backdrop, the study focuses on accounting for the social cost of compensating them justly for being displaced due to the proposed flood mitigation project of Butuan City.

1.2 Objectives of the Study

This study aimed to conduct estimation of the costs the government will incur in compensating the informal settlers affected by the Butuan City Drainage Improvement Project Phase 1. The

paper poses two specific research questions: first, describing the modalities for compensating the informal sectors, including the existing legislative, and policy framework of informal settlement. Second, accounting for the estimated cost the modalities will incur to the local government.

2. Review of Related Literature

2.1 Informal Settlements as an Urbanization Problem

The myopic and unguided economizing plan of the government without proper land use planning, effective infrastructure development or social housing program for informal resettlement due to expanding in-migration may resolve short term problem but eventually result to greater social costs (Rojas & Magalhaes, 2010; Ferguson, 1996). Nonetheless, informal settlements have become persistent feature of urbanization and globalization (Tsenkova et al., 2008).

Literatures enumerated six characteristics of informal settlements for which create environmental and urban development problems (Ferguson, 1996; Rojas & Magalhaes, 2004). First, informal settlers squat on areas typically lack a road network. Second, these dwellers settle in a denser area with poor or no adequate public facilities which increase their vulnerability to diseases and criminalities. Third, quality of electricity is often below formal sector standards are common sight in these communities. Fourth, access to quality drinking water increases the susceptibility to waterborne diseases and poor sanitation. Fifth, poor sanitation and waste water discharged experience by households in informal sector are largely attributed from the enumerated characteristics of dwelling enumerated above. Sixth, unplanned settlement generates water pollution and wastes accumulation as raw sewerage and garbage are thrown directly to nearby water system and open spaces (Rojas & Magalhaes, 2004). Table below summarizes of the major types of informal settlements with a reference to their location and quality.

Table 1. Matrix of Informal Settlement Types

Informal Settlement Types	Location			
	Inner City	Peri-urban	Substandard /Slums	Relatively good quality
Squatter settlements on public or private land	x	x	x	
Settlements for refugees and vulnerable people	x		x	
Upgraded squatter settlements	x	x		x
Illegal suburban land subdivisions on private or public land		x		x
Overcrowded dilapidated housing without adequate facilities	x		x	

Source: Tsenkova et al., 2008

Tsenkova et al. (2008) posted three costs of informal settlement, namely: economic, social and environmental. Informal settlements siphon considerable public and private investment outside the formal economy and investment cycle (De Soto, 2003). Notwithstanding the economic challenges faced by the individual occupant, informal settlements pose a high political and economic cost for the government and the public in cases of evictions, legalization and resettlements.

2.2 Upgrading of Informal Settlements

Recognizing the economic, social and environmental challenges of informal settlements is an important step toward practical and well-thought out urban housing policies. Providing security of tenure for informal settlers has been an integral part of most upgrading projects implemented in the last thirty years. Numerous evidences suggest that, a well-administered slum upgrading, has significant linkages with the socio-economic well-being of the poor in every society. It can help in combating poverty and vulnerability, achieving sustainable human development, and promoting environmental sustainability (UN Habitat Working Paper 2003; Global Report on Human Settlement Revised, 2010).

Rather than strive to eliminate informal settlements, governments began to formulate ways to accommodate existing informal settlements and to capitalize upon the energies that built the settlements in the first place. Under this new policy direction, governments withdrew from directly producing housing units and instead focused on enabling or facilitating settlement improvement by ensuring the availability of the basic inputs, namely urban infrastructure, land with tenure security, and appropriate financial and technical services, that enable people to improve their living situation themselves (Keare and Parris, 1982).

The provision of improved infrastructure and services to informal settlements is another central component of upgrading and one with the greatest record of success. This includes provision of basic infrastructure services such as water, sanitary facilities, roads, and street lighting, in a manner that is affordable to the urban poor. Many projects have resulted to better living standards and health indicators (Cohen, 2001).

Upgrading resettlement projects should also generate additional income for the urban poor. Studies conducted in India, the Philippines, and Brazil have shown that slum upgrading programs have a positive impact upon income by facilitating the establishment or expansion of home-based enterprises (HBEs) (Mehta and Mehta 1990).

A final solution is to relocate or resettle informal settlers. Relocation is intra-settlement in nature, basically shifting residents to new locations within their original neighborhood. Relocation is commonly caused by installation of infrastructure, such as opening up new roads or installing water pipes or sewerage. As expected, the degree of relocation within a settlement is linked to standards and has implications for project costs. Higher standards for parcel sizes, road reserves and infrastructure will cause more dislocation. Resettlement can be thought of as extra-settlement in nature: squatters are moved to a completely new place. In resettlement, projects must do more than move people; they must provide physical infrastructure as well as economic opportunities and social services (World Bank, 2003).

3. Methodology

Primary data were collected through inventory of losses (IOL), socio-economic survey (SES) and the replacement cost surveys. Implementation of these surveys took place in January to early March 2011. The census and IOL covered 100% of project-affected persons. The SES took a sample of 20% of severely affected households which have more than 10% of their productive assets to be affected by the project and 10% of all other PAHs. The replacement cost survey obtained data on the value of affected assets and the cost of replacing them as a basis for compensation.

In addition, Key Informant Interviews were also conducted to various government officials of key government agencies to generate the needed information on current market replacement and resettlement costs.

Lastly, the researchers also gathered primary information through scheduled visits to the city and site observations which involved recording of the various resources found in the communities, nature of housing, household/business activities, and potential attributes for community development. Table 2 presents the complete list of methodology and sources of information.

Table 2. Methodology and Sources of information

Needed/Required Information/Data	Methodology	
	Primary Sources	Secondary Sources
List of Affected Barangays	Interviews with Affected and Unaffected Households/Businesses	City Housing Office
Market Prices for Lot/Barangay per square meters		City Assessor Office and five (5) Commercial Banks DPWH
Market Prices for Structures		City Assessor Office
Market Prices for Crops and Trees		City Agriculture and City Assessor Office
Prices of Construction Materials	a) Interviews with eight (8) affected and (8) unaffected household and businesses b) Key Informant Interview includes: three (3) owner of construction company; three (3) land developers; and three (6) hardware store owners	City Housing Office DPWH
Labor Cost		
Average Construction Cost		

The secondary data were sourced from various government agencies. The list of affected barangays was provided by the City Housing Office. The data on comparative market prices for structures and lot per barangay were gathered from the City Assessor's Office, National Housing Authority (NHA) and the Department of Public Works and Highways (DPWH). Information for the market prices for perennial plants was obtained from the City Agriculture Office.

A standardized questionnaire was utilized for interviews with households and businesses, in both affected and unaffected areas. An interview guide was used for the key informant interviews which include information regarding current reproduction costs of structures and most common materials used in construction by local people.

4. Results and Discussion

4.1 Housing Needs in Butuan City

This high incidence of informal settlements can be attributed to the shortage of low cost housing in Butuan City. In 2009-2010, the Statistical Research and Training Center (SRTC), as the research and training arm of the Philippine Statistical System (PSS), in collaboration with Housing and Urban Development and Coordinating Council (HUDCC), conducted a research entitled "Housing Backlog Study" under the "Development of Shelter Monitoring Information System (DSMIS) Project."

Table 3. Housing Needs Estimates by Housing Indicator in CARAGA Region and Butuan City, May 2010

Location	Accumulated Needs					
	Rent-free without consent of owners	Homeless (Other type of Housing Units)	Dilapidated/ Condemned	Marginal Housing	Doubled-up Households in Acceptable Housing Units	Total
CARAGA Region	12,637	28	3,439	4,196	8,900	29200
Butuan City	2,645	3	451	269	1,243	4,611

Source: National Statistics Office

Following table 3 shows the Housing Needs (accumulated needs) estimates as of May 1, 2010 with CARAGA regional breakdown as well as for Butuan City. This shows that as of that point in time, total accumulated housing needs is at 12,637 and 2,645, respectively.

Another component of the research project with HUDCC is the identification of Informal Settler Families (ISFs). The SRTC, in collaboration with the Technical Working Group on Housing Statistics of the Technical Committee on Population and Housing Statistics coordinated by National Statistics Coordination Board, proposed for its operational definition:

Informal settlers are individuals/households living under any of the following conditions: lot without consent of the property owner (informal settler); danger areas (along riverbanks, railways, under the bridge, etc); areas for government infrastructure projects; protected/forest areas (except for indigenous peoples); areas for Priority Development (APDs); other government/public lands or facilities not intended for human habitation.

Households under the status “rent-free without consent from owners” or informal settlers comprise 58% at the regional level and 85% in Butuan City of the total need for housing. From the survey results, this prevalence, as well as the increase in the number of informal settlers in the city, is due to natural increases as well as in-migration. An estimated 90 per cent of the residents lack steady jobs and usually work as hired laborers on an irregular basis, peddlers, load carriers, household help, construction workers, among others. The relative low growth rate of the business sector has accentuated the city’s problem of inadequate labour absorption.

Table 4. Number of Households and Informal Settlers in CARAGA Region and Butuan City: 2000, 2010

Location	2000				2010			
	Number of Households	Rent-free without consent of owners	Incidence (Percent)	Ranked Incidence	Number of Households	Rent-free without consent of owners	Incidence (Percent)	Ranked Incidence
CARAGA Region	386,283	16,978	4.4	No 2 (out of 17)	504,257	12,637	2.51	No 4 (out of 17)
Butuan City	50,273	3,927	7.81	No 6 (out of 18)	65,642	2,645	4.03	No 11 (out of 18)

Source: National Statistics Office

4.2 Modalities of Compensating the Informal Settlers as Project Affected Households

4.2.1 Provision of Replacement Cost under the Premise of Fair Market Value and Subjective Value

Most countries around the world have constitutional and/or statutory standards that call for Fair Market Value (FMV) compensation for lost assets that the state expropriates. A second approach calls for Replacement Cost (RC). The compensation at Fair Market Value and Replacement Cost is dependent on (i) markets provide reliable information about prices and (ii) comparable assets or acceptable substitutes are available for purchase. The FMV is commonly defined as the amount that the land and structure might be expected to realize if sold in the open market by a willing seller to a willing buyer (Knetsch and Borchering, 1979).

Most governments in high- and middle-income countries with well-functioning legal systems have adopted FMV of the appropriated asset as the standard for determining compensation for state expropriations. The underlying reason for adopting the fair market value standard is that the market is an objective gauge for assessing the value of the land. Under the FMV standard, land expropriation laws in many of these countries provide further practical rules to guide adherence to the standard. Some countries provide a premium above the FMV because of the involuntary nature of the taking. In a compulsory land taking, the government is a willing buyer, but the affected landowners are often not willing sellers. Some governments have developed a variety of mechanisms to compensate landowners in excess of market value because of the involuntary nature of the taking (Ackerman, 1994).

In this study, FMV is based on the perspective of the City Assessor's and the private entities represented by banks and construction companies/developers.

On the other hand, RC for structures is computed in terms of the fair market value (direct costs which include materials, labor, developer's fee, etc.) plus indirect costs that include monetary cost of obtaining a building permit, fire protection permit, and real estate taxes.

In the Philippines, the indirect costs for structures involve building permit plus fire protection fee and insurance: USD199.89 (strong materials) and USD99.94 (light materials), real estate tax for residential properties equivalent to 1% of the zonal value or fair market value, whichever is

higher; and for commercial properties equivalent to 1.75% of the zonal value or fair market value, whichever is higher. This is based on year 2010 value, 1\$ is to PhP40.023.

A third approach used in this study is the Subjective Value. Subjective value is the amount of money or money's worth in return for which the owner would willingly part with a piece of property, whether or not there exist a willing purchaser at such a price. This is also referred to as reserve price. This is under the assumption that owners of all existing properties would have established in their minds a subjective value for their properties based upon their evaluation of the future returns to them personally. Such personal returns from the amenities enjoyed in their individual properties would be in excess of the demand prices of buyers in the market as evidenced by the fact that only a very small fraction of all properties are even offered for sale.

4.2.1.1 Compensations Rates for Structures Adopted in the Study

From existing practice of City Housing Office and from other secondary sources, the research adopted an 8-typology of structures which apply to both housing and business establishments. The typologies are as follows with corresponding descriptions (see Table 5). Predominance is attributed to the material used more than 50% of the structure (ie roof or wall). For most informal settlers, their houses are mixed but predominantly strong, makeshift; and mixed but predominantly makeshift.

Table 5. Eight Typologies of Structures

Typologies		Description
A	Strong	Galvanized Iron sheets; hardwood/ concrete foundation, columns, beam, walls and flooring; complete finishing and tilings.
B	Light	Nipa for roofing; lumber/bamboo for foundation, columns, beams and flooring; and amakan/light plywood for walls
C	Mixed but predominantly strong	More than fifty percent of the structure is made up of strong materials.
D	Mixed but predominantly light	More than fifty percent of the structure is made up of light materials.
E	Makeshift	Made up of salvaged materials
F	Mixed but predominantly makeshift	Made up of different construction materials but more than fifty percent is made up of makeshift materials
G	Semi finished but predominantly strong	Partially finished structure using predominantly strong materials.
H	Semi finished but predominantly light	Partially finished structure using predominantly light materials.

Table 7 & 8 shows the market valuations of the different typologies of affected structures and commercial buildings in the areas. The values presented are based on current market values and developer's cost. The current market values were obtained from the City Assessor's Office. The developer's cost is based on the highest cost set from the three developers per typology.

Table 6. Reproduction Cost for Three Developers

Typology	Cost per Square Meters (Php)		
	Jec's Construction	Kryzel's Construction	Engr. Buenaflor's Construction
Strong Materials	25,000	7,500	19,000
Light Materials	8,000	7,000	15,000
Mixed but predominantly strong materials	12,000	6,000	17,000
Mixed but predominantly light materials	10,000	5,500	13,000
Salvaged/Make-shift materials	1,000	3,000	5,000
Mixed but predominantly salvaged materials	6,000	4,500	7,000
Semi finished but predominantly strong materials	14,000	6,500	15,000
Semi finished but predominantly light materials	7,000	5,000	10,000

Table 7: Household Structure Rate per Typology

Types of Residential Structure	Commercial Developer's Perspective (sqm)	City Assessor's Office (sqm)		Respondent's Perspective (sqm) *Subjective valuation
		Residential	^Animal Coop	Affected Households
Mixed but predominantly strong materials	USD 424.76	USD 107.6- USD 112.94	USD 49.97 – USD 52.72	USD 62.46
Salvaged/Make-shift materials	USD 124.93	USD 46.47– USD 48.22		USD 12.49
Mixed but predominantly salvaged materials	USD 174.90	USD 51.72– USD 54.22		USD 16.24

At 2010, 1\$: PhP40.023

^Animal Coop: PigPen/Hog house, Poultry and Goat House

Table 8: ^Commercial Structure Market Value per Typology

Type of Commercial Structure	Commercial Developer's Perspective (sqm)	City Assessor's Office (sqm)	Respondent's Perspective (sqm) * subjective valuation
Mixed but predominantly strong materials	USD 424.76	USD 107.44 – USD 113.18	USD 107.06
Salvaged/Make-shift materials	USD 124.93	USD 46.47 – USD 48.72	USD 14.99
Mixed but predominantly salvaged materials	USD 174.90	USD 51.47 – USD 54.22	USD 18.74

At 2010, 1\$: PhP40.023

^Commercial Building includes apartment stores, restaurant, carenderia/eatery, sari-sari stores, dress/tailoring shops, KTV bar and hard wares

4.2.1.2 Valuation of Non-tenured Properties

In the case of Butuan City, the areas that were affected by the project predominantly consist of informal settlers. As a result some of the households and businesses interviewed were uncomfortable disclosing their valuation of the land and structure valuation because the nature of their settlement. They know that anytime the lots will be used, their structures will be demolished.

In the Philippines, the policy framework limits resettlement options to those whose tenure is insecure. Also, if the place of business is the pedestrian walkway, other easements, or the road itself, the law declares that these places are “beyond the commerce of man” and, therefore, they have no right to build or conduct business there in the first place. Their structures are illegal and therefore not subject to compensation when dismantled. Neither does the law provide any compensation for their loss of income during relocation.

4.2.1.3 Estimated Replacement Costs for Structures of Project Affected Household

The Replacement Cost (RC) approach for structures in a typical developed country setting of active markets is based on the theory that the market value of an improved parcel can be estimated as the sum of the land value and the depreciated value of the improvements. In other words, subtracting the land value from the overall value of the house and land will get the value of the house. Its underlying principle is that an informed buyer will pay no more for an improved property than the price of acquiring a vacant site and constructing a substitute building of equal utility, (Eckert, 1994).

The RC approach requires descriptive data on the improvements being valued. It is also important to determine an accurate cost estimate. Costs consist of all expenditures necessary to complete construction of a house or other building. They are either direct or indirect costs. Direct costs include materials and labor, while indirect costs include monetary cost of obtaining a building permit, registering the house with relevant government agency, insurance and real estate taxes.

For mass appraisal, the comparative unit method is widely used. This method, constructed based on the unit-in-place method, simplifies the estimation process by grouping all itemized direct

costs and indirect costs into a composite unit cost expressed in square foot of ground area or floor area or cubic feet of space. The unit cost further breaks down based on quality of the structure and the number of stories. Percentage or lump-sum adjustments for features not included in comparative unit cost may be made with the unit-in place method. Cost estimations for both single-property appraisals and for mass appraisals attempt to answer the question, “How much does it cost to build the same structure today?” In this study, this achieved though the cost estimates provided by the real estate developers reflected in Table 9. Building cost data are readily available for valuation purposes which fit well with this approach. In the Philippines, the government does not account transaction costs for buildings made of salvaged and mixed but predominantly salvaged materials. Businesses and households living in these construction materials are informal settlers in the area.

The last step for valuing structures is to estimate accrued depreciation. Accrued depreciation is the loss in value from replacement cost which is defined as the replacement cost as if the similar structure were built as of the date of appraisal. This depreciation is based on the concepts of the structure economic age and economic life. The concept here is that, as the structure ages in time, its physical value will diminished. For the case of informal settlers, the cost of building their structure is purely direct cost because construction of their structures did not go into legal means hence, they did not paid for any indirect costs like building permit, fire protection fee, insurance and real estate tax.

Table 9. Commercial Developer’s Cost and Economic Valuation

Types of Structure	Commercial Developer’s Cost (psm)	Economic Valuation				
		Direct and Indirect Costs		Life Span in years	Depreciation Cost per Year	
		Residential	Businesses		Residential	Businesses
Mixed but predominantly strong materials	USD 424.76	USD 112.94	USD 113.18	18	USD29.87	USD29.89
Salvaged/Make-shift materials	USD 124.93	USD 48.22	USD 48.72	.5	USD 0	USD 0
Mixed but predominantly salvaged materials	USD 174.90	USD 54.22	USD 54.22	1.5	USD152.76	USD152.76

At 2010, 1\$: PhP40.023

Table 10 below displays the market value, respondent’s perspective, and replacement cost for the structure per typology. Replacement Costs are based on the interplay of commercial developers’ cost and depreciation cost. Depreciation cost is computed for one year only. Therefore, the recommended rate of the structure is computed for one year depreciation cost. Replacement cost is derived by deducting one year depreciation cost to commercial developer’s cost. As shown in the Table 9, structure made of salvaged materials has a life span of six months, while structure made of mixed but predominantly salvaged materials has a life span of eighteen months. The replacement costs for structures on mixed but predominantly strong materials, salvaged and mixed but predominantly salvaged materials exclude the cost for building permit, fire protection permit, insurance fee and real estate tax. Aside from that, replacement cost of structures made of salvaged materials is zero due to its shorter life span. This structure is fully depreciated before one year. Structures made of these materials are used by informal settlers in the area without any user costs for the construction of the building.

Table 10. Market Value and Replacement Costs for Structure

Types of Structure	Commercial Developer's Perspective (sqm)	Residential (sqm)		^Commercial (sqm)		Replacement Cost (sqm)	
		City Assessor's Market Value	Respondent's Perspective *subjective valuation	City Assessor's Market Value	Business Perspective *subjective valuation	Household	Business
Mixed but predominantly strong materials	424.76	USD 107.6- USD 112.94	USD 62.46	USD 107.44 – USD 113.18	USD 107.06	USD 394.89	USD 394.87
^^Salvaged/Make-shift materials	124.93	USD 46.47– USD 48.22	USD 12.49	USD 46.47 – USD 48.72	USD 14.99	0	0
Mixed but predominantly salvaged materials	174.90	USD 51.72– USD 54.22	USD 16.24	USD 51.47 – USD 54.22	USD 18.74	USD 20.14	USD 20.14

At 2010, 1\$: PhP40.023

^Commercial Building includes apartment stores, restaurant, carenderia/eatery, sari-sari stores, dress/tailoring shops, KTV bar and hard wares.

4.2.1.4 Estimated Replacement Costs for Residential Structures

Table 11 presents the total households affected in the project, residential valuation at various perspectives, estimated replacement cost of respective floor area and total estimated replacement cost per typology. There 175 informal settlers living on the project site, of these 117 are settled in a mixed but predominantly strong materials, 37 settlers are living in a house classified as mixed but predominantly salvaged materials, and 21 residents are living in houses made of makeshift materials. Given the replacement cost in table 8, the sixth column enumerates the estimated replacement cost per land area for each typology. From the area survey conducted by the researchers, the average floor area for residential structures made of salvaged/makeshift and mixed but predominantly salvaged materials is around 24 square meters while mixed but predominantly strong materials is 32 square meters. The last column computes the total estimated replacement cost of the affected households per typology amounting to USD 1,496,352.48. As noticed, bigger bulk of the total estimated replacement cost is attributed to structures which use strong housing materials. In the perspective of the Philippine government, the replacements cost for structures made of salvaged and makeshift material is zero.

Table 11. Replacement Cost for Residential Structure

Types of Residential Structure	Total House holds affected	Commercial Developer's Perspective (sqm)	City Assessor's Market Value (sqm)	Subjective Value by Households (sqm)	↑Estimated Replacement Cost with Respective Floor Area	Total Estimated Replacement Cost per Typology
Mixed but predominantly strong materials	117	424.76	USD 107.6– USD 112.94	USD 62.46	USD 12636.48	USD 1,478,468.16
Salvaged/Make-shift materials	21	124.93	USD 46.47– USD 48.22	USD 12.49	0	0
Mixed but predominantly salvaged materials	37	174.90	USD 51.72– USD 54.22	USD 16.24	USD 483.36	USD 17,884.32

At 2010, 1\$: PhP40.023

↑Assumption: The average house size for salvage/makeshift and mixed salvage is both 24 sqm while mixed but predominantly strong is 32 sqm.

4.2.1.5 Estimated Replacement Costs for Commercial Structures

Table 12 presents the total commercial structures affected in the project, valuation of commercial structures at various perspective, estimated replacement cost of respective floor area and total estimated replacement cost per typology. In this study, there are 13 affected businesses in the project site. The sixth column calculates the estimated replacement cost per floor area. Based on the area survey, the average commercial structure for salvaged/makeshift and mixed but predominantly salvaged materials is 10 square meters while mixed but predominantly strong materials is 34 square meters. The last column estimates the replacement cost of the commercial structure amounted to USD 95,373.00. The larger share of this figure is apportioned to commercial structure which uses strong materials.

Table 12. Replacement Cost for ^Commercial Structure

Types of Commercial Structure	Total Businesses affected	Commercial Developer's Perspective (sqm)	City Assessor's Market Value (sqm)	Subjective Value by Business (sqm)	↑Estimated Replacement Cost with Respective Floor Area	Total Estimated Replacement Cost per Typology
Mixed but predominantly strong materials	10	424.76	USD 107.44 – USD 113.18	USD 107.06	USD 9476.88	USD 94,768.80
Salvaged/Make-shift materials		124.93	USD 46.47 – USD	USD 14.99	0	0

			48.72			
Mixed but predominantly salvaged materials	3	174.90	USD 51.47 – USD 54.22	USD 18.74	USD 201.4	USD 604.20

At 2010, 1\$: PhP40.023

^Commercial Building includes apartment stores, restaurant, carenderia/eatery, sari-sari stores, dress/tailoring shops, KTV bar and hard wares.

↑Assumption: The average floor size for salvage/makeshift and mixed salvage is both 10 sqm while mixed but predominantly strong is 24 sqm.

4.2.1.6 Estimated Replacement Costs for Trees and Other Crops

Households in the project site grow 2-3 fruit bearing trees on the average. In this study, the most common fruit bearing trees and perennial plant are calamondin (local name: calamansi), guava and coconut tree. The market value of these fruits and perennial plant is shown in Table 13. In this study, 60 percent of the settlers grow these trees and perennial plant. Except for coconut, trees bear fruits twice a year. Thus, the total estimated replacement cost for fruit bearing trees and plant is USD 2,153.89.

Table 13. Market Value of Perennial Plants and Fruit-Bearing Trees

Kinds	Market Value
Coconut/Tree	USD 4.52
⊥(Calamondin)/Tree	USD 5.75
⊥Guava (Native)/ tree	USD 2.25

At 2010, 1\$: PhP40.023

⊥ Bears fruits twice a year

4.2.2 Resettlement of Informal Settlers as Project Affected Households

Another scheme to compensate for the PAHs is to relocate them to a resettlement area. In case of the Butuan Drainage Project, this option was adopted by the government.

4.2.2.1 Philippine Legal Framework for Resettlement of PAHs Affected by Public Projects

This section discusses The Philippine Republic Act 7279 and Land Acquisition, Resettlement, Rehabilitation and Indigenous People’s Policy 2007 (LARRIPP). The former is the foundation of resettlement policy in the Philippines while the latter is the policy and guidelines of Department of Public Works and Highways (DPWH) on resettlement as expressed in the Infrastructure Right of Way Procedural Manual (2003).

4.2.2.2 Republic Act 7279 (Urban Development and Housing Act of 1992)

As stated in Section 28 of the Act, eviction and demolition as a practice shall be discouraged and may be allowed when persons or entities occupy danger areas and when government infrastructure projects with available funding are about to be implemented or when there is a court order for eviction and demolition.

Based on Section 29 of the Act, the local government unit, in coordination with the National Housing Authority, shall provide relocation or resettlement sites with basic services and facilities

and access to employment and livelihood opportunities sufficient to meet the basic needs of the affected households.

4.2.2.3 Land Acquisition, Resettlement, Rehabilitation and Indigenous People's Policy 2007 (LARRIPP): DPWH Policy and Guidelines on Resettlement

The following section is an adoption from the policy and guidelines of ¹DPWH on resettlement as expressed in the Infrastructure Right of Way Procedural Manual (2003) and the Land Acquisition, Resettlement, Rehabilitation and Indigenous People's Policy (3rd edition in April 2007).

Compensation in LARRIPP shall only be given to legal landowners, owners of structures who have full title, tax declaration, or who are covered by customary law (e.g. possessory rights, usufruct, etc.) or other acceptable proof of ownership, owners of structures, including shanty dwellers, who have no land title or tax declaration or other acceptable proof of ownership, and renters.

4.2.2.4 Indicators of Severity of Impacts

Properties to be acquired for the project may include the entire area or a portion of it. Hence, compensation for such assets or properties depends on whether the entire property will be affected or just a portion of it. The condition is classified as "Severe" if the portion of the property to be affected is more than 20% of the total land area or even less than 20% if the remaining portion is no longer economically viable or it will no longer function as intended. The owner of this property (land or structures, etc.) shall be entitled to full compensation in accordance to RA 8974. On the other hand "Marginal" will be the classification if the impact is only partial and the remaining portion of the property or asset is still viable for continued use. Compensation will be on the affected portion only.

4.2.2.5 Compensation per Category of Assets Affected

The classifications or categories of assets to be compensated include land, structures, other improvements, crops, trees and perennials. Compensation for structures will be provided in cash for the affected portion of the structure, including the cost of restoring the remaining structure, as determined by the concerned Appraisal Committee, with no deduction for salvaged building materials. In addition compensation for other improvements will be given as cash at replacement cost for the affected portion of public structures to government or non-government agencies or to the community in case of a donated structure by agencies that constructed the structure. This will also include compensation to cover the cost of reconnecting the facilities, such as water, power and telephone. Lastly, cash compensation for crops, trees and perennials of commercial value will be determined by the DENR or the concerned Appraisal Committee.

4.2.2.6 Other Types of Assistance or Entitlements

Six other types of assistance will be given to PAHs. First is the disturbance compensation for agricultural land severely affected the lessees are entitled to disturbance compensation equivalent to five times the average of the gross harvest for the past 3 years but not less than PhP 15,000 (USD 374.78). Second, coverage for income loss, the PAHs will be entitled to an income rehabilitation assistance to be based on the latest copy of the PAHs' Tax record for the period corresponding to the stoppage of business activities, otherwise not to exceed PhP 15,000 (USD 374.78) for severely affected structures. Third, inconvenience allowance in the amount of P 10,000 (USD 249.56) shall be given to PAHs with severely affected structures, which require relocation and new construction. Fourth, rehabilitation assistance in the form of skills training

¹ Department of Public Works and Highways, 2011. Resettlement Action Plan in Accordance with the JICA Resettlement Guidelines/Policies for Social Considerations p. 25

and other development activities equivalent to P 15,000 (USD 374.78) per family per municipality will be provided in coordination with other government agencies, if the present means of livelihood is no longer viable and the PAHs will have to engage in a new income activity. Fifth, rental subsidy will be given to PAHs without sufficient additional land to allow the reconstruction. Lastly, transportation allowance will be given for relocated PAHs.

4.2.2.7 Legal Entitlement

This section specifies the additional entitlements that will be received by the informal settlers affected in the proposed flood mitigation project. The compensations/entitlement is either based from RA 7279 and adoption from DPWH project; and the researchers' recommendation. The entitlement matrix for compensation is shown in Table 14.

Table 14. Matrix for Entitlement Compensation

Type of Loss	Structure Typology	Compensation/Entitlement	
		Under RA 7279 and adoption from DPWH project (see note 3).	Researchers' recommendation
Structure	Mixed but predominantly strong materials	<ul style="list-style-type: none"> Inconvenience allowance P 10,000 (USD 249.86). For transportation assistance, minibuses will be used for free transportation of families that include children, women and senior people, instead of trucks. 	<ul style="list-style-type: none"> Cash compensation for entire structure (residential and commercial) at full replacement cost
	Salvaged/Make-shift materials	<ul style="list-style-type: none"> For the families with persons who need special physical or medical care, DPWH will request respective LGUs to provide 	
	Mixed but predominantly salvaged materials	<ul style="list-style-type: none"> nurses or social workers to help them before and during the resettlement activities. 	
Crops, Trees, Perennials		<ul style="list-style-type: none"> Cash compensation for crops (which are not yet suitable for harvesting), trees, and perennials at current market value as prescribed by the concerned LGUs and DENR, confirmed by DPWH as the same level with market value. 	<ul style="list-style-type: none"> Cash compensation for crops, trees and plants at market value.
Improvements (pig pen, dog houses, pigeon houses, fences)		<ul style="list-style-type: none"> Cash compensation for the affected improvement at full replacement cost. 	<ul style="list-style-type: none"> Cash compensation for entire structure at full replacement cost
Livelihood Rehabilitation Assistance/Training		<ul style="list-style-type: none"> DPWH will monitor the change of living standard of the PAF before and after the resettlement. When the PAF are found that 	

		their living standard worsen, or whose present means of livelihood became not-viable, DPWH, in coordination with other appropriate institutions, will provide assistances, such as skills and livelihood trainings.	
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4.2.2.8 Total Resettlement Cost for the Project Affected Households

Following all the legal provisions for resettlement, Table 15 shows the estimated cost for 175 project affected households. The total amount is estimated at USD 14,147,765.26. This excludes the cost estimation for internal and external monitoring and evaluation; and price escalation and taxes. The account name, Development of relocation site includes the cost on house and lot, road, water supply, electricity and site development.

Table 15. Total Estimated Resettlement Cost

Activities	Estimated Cost (PhP)	Estimated Cost (USD)
A. Preparatory Services	2,250,000	56,217.67
B. Capability Building, Skills and Livelihood Training Programs for Project Affected Families	36,000,000	899,482.80
C. Acquisition of Properties		
Land acquisition including payments of various Subdivision Survey, Parcellary Survey and Relocation Survey of affected lots including access road and Relocation Site	396,000,000	9,894,310.77
Miscellaneous Expenses (Expropriation, Barter and related activities)	10,500,000	262,349.15
	3,750,000	93,696.12
D. Transfer and Titling of Properties		
Taxes and fees	6,670,800	166,674.16
Titling expenses	7,872,000	196,686.91
Other expenses including legal advisory fee	3,000,000	74,956.90
E. Clearing of Structures, Improvements and Removal of Dwellers	26,340,000	658,121.58
F. Administrative Expenses		
Butuan Local Government Units (Local Project Management Team)	21,600,000	539,689.68
Purchase of Vehicular Service	10,500,000	262,349.15
G. Development of Relocation Site	32,986,009	824,176.32
H. Contingency Reserve	8,767,200	219,054.04
TOTAL	566,236,009	14,147,765.26

At 2010, 1\$: PhP40.023

4.2.2.9 Total Costs of Compensating the Informal Settlers as Project Affected Households

Overall, to ensure the equitable compensation for the displaced informal settlers, the informal settlers' upgrading costs would incur the government an estimated amount of PhP 629,287.99 or USD 15,723,156.11.

Table 16

There are no sources in the current document.. **Total Estimated Cost of Compensating Informal Settlers**

Activities	Estimated Cost (PhP)	Estimated Cost (USD)
Total Replacement Cost Physical Structures (Residential)	59,172,731.17	1,478,468.16
Total Replacement Cost Physical Structures (Commercial)	3,792,931.68	94,768.80
Total Replacement Cost Crops and Trees	566,236,009	14,147,765.26
TOTAL	629,287,876.99	15,723,156.11

4.2.2.10 Financing the Compensation Cost for the Informal Settlers

The local government intends to request a loan from the Asian Development Bank (ADB) to finance the project. The loan will have a term of 25 years, including a grace period of 6 years, with an interest charge at the rate of 1.07% (comprising 0.87% 5-year Japanese Yen swap rate and 0.20% ADB spread) per annum. The ADB loan proceeds will be on-lent to the Government of the Philippines and to each participating local government unit and water district. The Government of the Philippines will bear the foreign exchange risk. Interest during the project implementation period will be capitalized. The ADB loan will finance 79.7% of the project cost, and co-financing through the Global Environmental Facility will finance 2.4%. About 18 % of the total project cost will be provided by the Government of the Philippines through DENR (ADB, 2011).

5. Conclusion

With the implementation of the flood mitigation project through the Butuan City Drainage Project, a number of the city's residents particularly informal settlers in the project site were directly affected, hence the need to be compensated or relocated to appropriate resettlement sites. This paper has two purposes. First, the paper seeks to broaden the inquiry into the modalities of compensating justly informal settlers affected by a government through upgrading initiative. Secondly, it tries to incorporate the estimation of the cost such modalities will incur. This comprehensive review is intended to provide a solid baseline of information on experience of in upgrading in Philippines.

Economically speaking, if the government is forced to pay for what it acquires, it should strive to make rational economic decisions that will bring beneficial development to all parties. In the spirit of social justice, the government has to give protection to the reasonable expectations of those who will be affected and relied on it, particularly the marginalized, as in the case of the informal settlers. Just solutions must not only consider the replacement cost but also the resettlement cost for the affected households and their livelihoods. It must ensure that the living standards and future livelihoods are maintained and improved. It should not hamper the informal settlers' previous access to social, economic and political activity.

The findings of the study have crucial policy implications which should increase policymakers' awareness that informal settlement represent a solution well as cause a great burden. In the case of the Butuan Drainage project, the compensation for the informal settlers resulting from the

project may be a means to uplift the economic conditions of these members of society and improve their economic well-being. However, informal settlers add up to the financial burden of implementing public infrastructure projects. The compensation measures add to the cost of implementing public infrastructure projects. This evident in the Butuan Drainage Project where a substantial amount was needed to implement the project. Governments reap great public costs from the resulting informal settlements mid and long-term. The costs could divert valuable government resources into expenditures which otherwise could have been spent on other development projects. Thus it is imperative that local government units must be effective in preventing unguided land invasions as well as establish sustainable solutions that address the problems causing informal settlements.

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