LIMITS TO LARGE-SCALE RECONSTRUCTION IN HONDURAS: LAND DEVELOPMENT FOR LOW-INCOME HOUSING IN INADEQUATELY FUNCTIONING LAND MARKETS

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Introduction

The constantly evolving and dynamic use of land by human activity has been an object of study for more than a century. From the earliest observers of how society allocates land uses differently (J.H. von Thunen, George Perkins Marsh) to more recent attempts to understand the principles driving land use change (William Alonso, Manuel Castells, and Allen Scott) the performance of land markets continues to be influenced by many variables with varying degrees of impact. Increasing our understanding of land market behavior requires the consideration of each moving part separately, all moving parts collectively, and the context within which they must operate. Particularly in developing countries, because of the discord that exists between legal provisions and practice, the institutional context within which the land market must operate is an overarching variable that will influence other aspects of land market functionality. Accordingly, as would be advocated by structuralist-institutionalist theorists, an accurate analysis of the land market in development countries must first and foremost take stock of institutional realities.

The most basic manifestation of a poorly performing formal land market is one where the supply of land does not satisfy the demand. Over time, this type of land market failure becomes a driving force in shaping the city because it forces economic actors to adopt strategies outside the formal market for obtaining and using land. In many developing countries these alternative strategies evolve into full blown parallel land markets which sometimes threaten to overshadow formal mechanisms. The prolonged systematic development of these settlements in the context of an unregulated land market leads to inefficient land-use patterns where the construction of infrastructure and the delivery of services become costly and where settlement patterns are more markedly segregated by economic power.

In the context of long-term inefficient, high-risk settlement patterns, natural phenomena (hurricanes, storms, floods, land slides, earthquakes, etc.) can quickly multiply their disastrous consequences. The pattern of destruction is greatly increased when a storm strikes settlements in environmentally high-risk areas such as natural drainage channels, unstable hillsides, and floodplains. To a certain degree, reconstruction after large-scale destruction offers a unique opportunity for land market corrections. Urban dwellers in high risk zones are temporarily displaced (or longer) from these areas, an instant high demand for homes and buildings materializes, special financing for infrastructure may become available, and new urbanization patterns can be influenced. There are also formidable obstacles with which to contend as a result of these phenomena including human suffering, delivery of basic services, control against public health epidemics, and the increased urgency for quickly resettling displaced families. As the following analysis demonstrates, immediate opportunities for land market corrections and impact are short-lived and limited by the same institutional and structural constraints of the land market that existed before the emergency; the same constraints that contributed to market inefficiencies in the first place.

By focusing on three of the larger human settlements built during the reconstruction period following Hurricane Mitch (October, 1998), an opportunity exists to understand how these urban land markets respond to large-scale public sector interventions and how this type of land development has shaped urbanization patterns, if at all, six years later. Three variables that have driven change in these land markets will be addressed: lack of enforcement of planning regulations; poorly functioning non-regulatory components of land markets; and agent-based choices and strategies. Corrective measures, policy incentives, and the appropriate role of local governments will also be discussed.

The consequences of unenforced regulations and poorly functioning land markets

In their most rudimentary expression, land markets are shaped by the amount of land supplied by owners and the amount of land demanded by users. Therefore the mechanisms and systems that facilitate these transactions are fundamental for the functioning of the land market. If legally sanctioned mechanisms operate well for all types of actors that wish to participate in the land market, then the majority of transactions between supplier and demander will be transacted in the formal market. If these factors are weak or not easily accessible to all economic agents, whether on the supply or the demand-side, the functioning of the formal land market can become obstructed at best or obsolete at worst. The extent to which mechanisms outside the formal market become a viable alternative will depend on the success, or lack thereof, of potential supply and potential demand resolving their needs. Ultimately, market forces will adapt to both the regulatory as well as the non-regulatory environment. In developing countries such as Honduras, regulatory measures may be legislated to function in a certain manner, such as the urban boundary or infrastructure requirements for residential areas, but in practice may prove to have unintended impacts.

Local governments have mechanisms available with wide-ranging effectiveness to influence the behavior of land markets. Land use regulations, zoning ordinances, subdivision standards, concurrent infrastructure requirements, land taxation schemes, and the imposition of urban growth boundaries are all tools that affect the supply of land with varying degrees of success. The effectiveness of these regulations is predicated largely on the administrative and coercive capacity of the local government to manage and enforce them. When land market analysts cite the relevance of land use regulations for shaping the behavior of the land market, they are implicitly assuming that local governments are effectively enforcing existing regulations. In developing countries with weak institutions, this is a false assumption. Most of these regulations, if they exist at all, go unenforced and thereby provide no real limiting impact to the functioning of the formal land market. Local government ineffectiveness is a driving factor that leads to a *de facto* under-regulated land market where even the most basic regulatory measures, such as prohibiting development in environmentally high risk zones or limiting urban growth to an established urban boundary,[1] remain unenforced. Within this context, the acquisition and development of land tends to be mostly affected by non-regulatory market forces. In Honduras, as in other countries in the developing world with a closed or captured economy, these non-regulatory market forces are accessible by a relatively limited number of actors who manipulate public and private institutions for their own benefit (Hellman et al 2000). In this respect, formal markets that resolve the transactions of a limited number of privileged economic actors are no longer viable systems for the public-at-large to efficiently fulfill its needs for land.

The limitations in effective governance at the local level in Honduras are mirrored by the poorly functioning non-regulatory components that underlie land market dynamics: financing mechanisms, the property rights regime, and the provision of infrastructure.

In the case of Honduras, both supply and demand are faced with limited financial mechanisms and products to finance their activities in the land market. When financing mechanisms are not sufficiently diversified and competitive, or are limited by a fragile financial system, financing becomes scarce and prohibitively expensive for most developers (supply) and buyers (demand) of new land. In part, the fragile state of the Honduran financial system and vulnerability of its relatively small banking sector[2] is due to the way in which the country has handled agricultural credit and losses (IMF 2003). The government bail-out of debtors has negatively impacted the financial system by encouraging moral hazard and damaging market discipline. The consequences for land market transactions are further complicated by banks' reluctance to provide mortgage-backed credit where property rights are uncertain and when court proceedings for foreclosure are lengthy. These factors and a higher non-performing loan to total loan ratio in Honduras as compared to other Central American countries has made the banking sector more conservative in its loan-making.

Most consumers of land and housing, especially the largest sector of the population,[3] do not qualify for mechanisms offered by the formal banking sector. For this consumer cohort, mechanisms outside the banking sector are also limited. One promising outlet for low-income families is the *Fundación para el Desarrollo de la Vivienda Social y Rural* (FUNDEVI), created in 2002 to provide financing to those households with monthly incomes of between two and six baskets of basic goods. During 2003 and 2004, FUNDEVI authorized a total of 1,499 credits and subsidies in Tegucigalpa, Choluteca, and El Progreso (FUNDEVI 2005), still well below the existing demand and representing only a fraction of the post-Mitch housing boom.

Consumers are also confronted by a deficient property rights regime that encumbers the legal transfer of land and the commodification of property. In Honduras, an estimated US$8 billion of real estate property in urban areas has been identified as dead or inactive capital (ILD 2001), that is, capital which is not captured by the formal market and cannot be utilized as a source for generating additional wealth or economic activity. Inaccurate land registry systems, complicated registry practices that produce long delays, and a weak judicial system that does not adequately enforce property rights and resolve disputes in ownership all contribute to the inefficiency and weakness of the formal land market. The nominal-based registries, in place from 1906 through 2004, provided titles linked primarily to the owner and described by imprecise measurements,[4] rather than linking title more explicitly to the physical property as described by objective measurements. In this type of system, the purchase and sale, subdivision, or assembly of land becomes difficult to transact without disputes. This was the system under which the explosive urbanization of the 1970's and 1980's took place in Honduras.

Infrastructure provision is also an important input to ensure that raw land is available for appropriate residential, commercial, industrial, or public uses. The intensive land use that accompanies urban areas makes the provision of infrastructure all the more critical for cities experiencing growth. The ability to provide serviced land at a reasonable cost and rapidly enough to accommodate urban growth is necessary in order for the supply of land to satisfy the potential demand. The two important obstacles that impede the efficient development of public networks of water and sanitation in Honduras, financing and operation and management, are closely linked. If there are few or no viable financing mechanisms available, it becomes difficult to finance the repair and rehabilitation of existing systems or construct new ones. Similarly, when the internal management systems of the service provider are not operationally and financially sustainable, the provision of existing services, not to mention the needs of an expanding urban population, is further complicated.

Because the components that make up the land market function poorly or include structural barriers that limit access to the formal market, individuals who utilize these scarce mechanisms are afforded highly privileged positions within the economic system. They become economic elites not because of their competitiveness but because of their access and ability to maneuver within the captured formal market. The privileged access to limited information, as well as financial and legal systems, creates a high level of inequity in the patterns of land occupation and human settlements within the larger city.

Throughout Latin America this type of inequity is manifested in well-known urbanization trends characterized by the proliferation of irregular land development. Without access to the formal land markets and in the absence of enforced regulations, low and even some middle-income groups throughout the region have opted for settlement strategies outside the formal land market. Because of the inability of land markets to provide sufficient supply for the ever increasing demand for urban land, many cities now have significant portions of their inhabitants living in irregular settlements: an estimated 59% of the urban population in Bogotá, 50% in Caracas, 50% in Quito, 40% in Mexico City, and 50% in Tegucigalpa (Clichevsky 2000, PADCO 1998). These irregular settlements can be characterized by their origins: land invasions, illegal subdivisions and purchases, and incremental expansion of existing settlements (Angel 2002). Whereas invasions were characteristic of early generation solutions to the land crisis (1960's and 70's), this type of occupation of space is now rare. In Honduras, for example, the evidence suggests that more and more, irregular land development and occupation is being conducted through some type of market transactions albeit outside the formerly established mechanisms.

As a result of the existing financial, property rights, and infrastructure constraints, only a small sector of the population can benefit from the formal market. Land development occurs in the formal sector, but only in a limited form by few actors with large capital reserves or privileged access to land. Consequently, a great deal of potential demand for land remains unresolved in the formal sector and is directed to informal market mechanisms. In Tegucigalpa the formal land market produced 24 residential subdivisions (for all income groups) between 2000 and 2004 for an approximate total of 4,600 housing solutions (METROPLAN 2005). However, during this time period the city increased by an estimated 18,457 households (INE 2001). The remaining 13,857 households not covered by the 24 residential subdivisions produced by the formal land market were forced to resolve their needs through irregular mechanisms or by overcrowding existing units, both of which tend to lead to substandard living conditions.

An important and direct consequence of the poorly functioning land markets has been the equally inadequate performance of the housing sector. In Honduras, housing deficits have historically remained high while the production of housing units has been consistently low. An estimated average of 3,500 new housing units were built annually on a national level by the formal market (both public and private housing starts for all income groups) in the 1980's, and 5,100 new housing units produced annually by the formal market from 1994-1996 (Pisani 1997). This is compared to the 46,700 units per year that need to be built or renovated to satisfy existing deficits. Unquestionably more housing has been produced during this time period, just not within the formal sector.

Reconstruction for displaced families

For many years before Hurricane Mitch, poor practices of land management in the country's largest cities took place. During the period of low urbanization rates, the inefficient land use patterns produced in the absence of regulation and enabled by poorly functioning land markets were manageable. As the rates of urbanization picked up in Honduras (1970-1990), the consequences of previously deficient land markets became compounded. In the unregulated land market, land supply was not providing enough for the land being demanded, the property rights regime could not address the influx of transactions, and the lack of infrastructure financing caused deficits in basic services. Under this paradigm, those who were able to overcome these constraints, possess sufficient financing, or access to scarce information, were able to participate in the formal market. The majority of the population that did not have easy access to financing or for whom land was not available were forced to adopt alternative strategies.

In each of the three cities included in this analysis, informal settlements began to spread in areas not optimal for the provision of services or in environmental risk zones. Hurricane Mitch, a 100-year storm, did significant damage to these areas. Destruction would have been great because of the magnitude of this storm, but was all the greater because of settlement patterns that took place in a poorly functioning land market with unenforced regulations.

Nationwide, approximately 33,000 homes were destroyed and 50,000 were damaged by the hurricane. In the three-year reconstruction period that followed (1999-2001), an estimated 27,000 homes were rebuilt within the constraints of the formal land and housing markets (UPPV, 2001), representing the largest boom in land and housing development for low-income families in the country's history.

The seemingly endless amount of funds provided by donor countries and other relief organizations helped to level the playing field (at least temporarily) in terms of access to land and housing markets by low-income families, but not in any permanent or structural way. As a result of the injection of economic and political resources, existing barriers were overcome and access to the formal land market was achieved on behalf of the poor. Financial viability was no longer a constraining factor, nor was the absence of infrastructure financing since the reconstruction efforts included funds for the development of raw land. The barriers inherent in land ownership continued to represent a constraint but were ultimately resolved by political and economic influence, the type not available to the common low-income dweller

under normal circumstances. Beneficiaries were offered an unprecedented opportunity to receive legal title to newly constructed homes connected to basic services in environmentally risk-free zones. Despite the substantial gains in land development and housing production, this type of donor-led approach is not an efficient or sustainable way to build low-income housing because of high per-unit costs and the size of subsidies that far out-strips the national capacity. Six years after the hurricane, housing and land markets continue to function poorly even though urbanization trends were appreciably influenced in some localized cases.

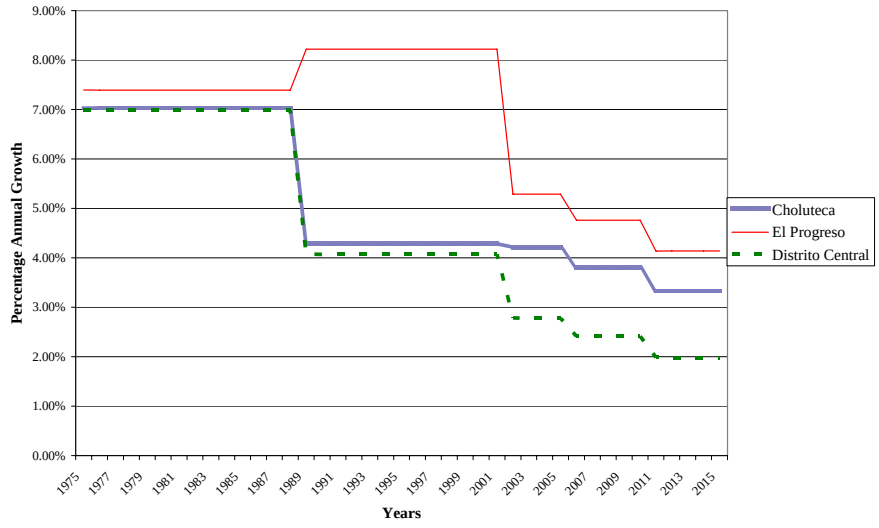
Three of the cities hardest hit by the effects of the hurricane were Tegucigalpa, Choluteca, and El Progreso.

Tegucigalpa

In Tegucigalpa (pop. 980,000) (INE 2001a), the Honduran capital located in mountainous terrain, torrential rains caused large-scale destruction, land-slides, and flooding. The long-standing urban growth of Tegucigalpa, with limited enforcement of zoning regulations, had led to an inefficient settlement pattern prior to the hurricane that expanded along hillsides and in high-risk zones. This type of uncontrolled growth made the delivery of basic services as well as the construction of roads and drainage systems very costly. In the absence of sufficient financing programs, most of this infrastructure has not been adequately addressed by the public authorities and has been left to the initiative of the dwellers. Due to the ineffectiveness of the formal land market, most urban dwellers have opted to resolve their residential needs through the informal market. By 1998, an estimated 225 of the 340 neighborhoods in the city were occupied by informal or irregular settlements often times located in high risk areas (PADCO 1998).

Urbanization in Tegucigalpa was highest in the 1970s and 1980s, rising at an estimated 7% annually (INE 1974, 1988, 2001a). Figure 1 provides a comparison of the three cities analyzed in this study. Tegucigalpa is the most urbanized municipal district in a country that is still undergoing important demographic shifts from rural to urban areas.[5] Nationally, the Honduran population is roughly evenly

Figure 1. Urban Growth Rates (1975-2015)



Source: INE 1974, 1988, 2001a, 2001b

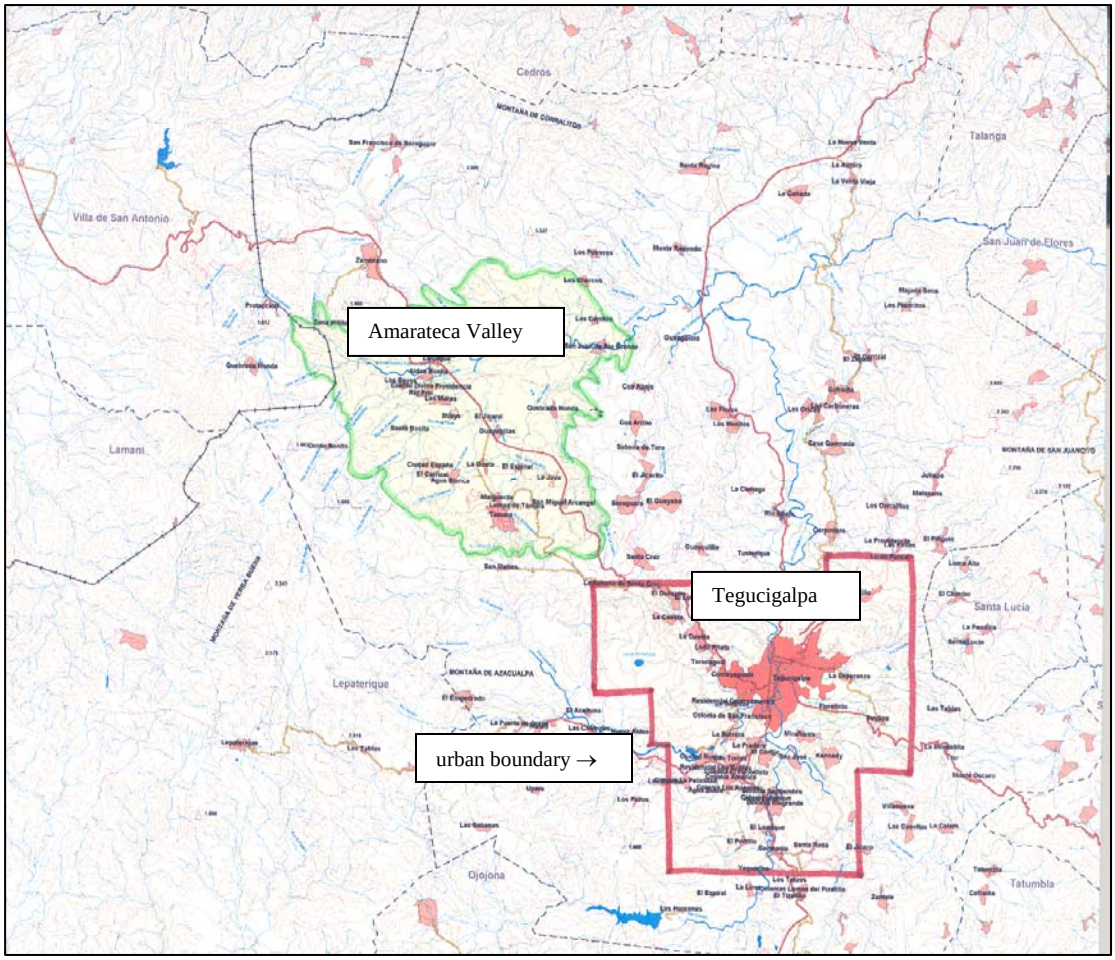
divided between urban and rural dwellers, contrasting sharply with high levels of urbanization across Latin America. The growth of the urban population in Tegucigalpa is expected to continue to grow albeit at a reduced rate, with medium-sized cities such as Choluteca and El Progreso experiencing greater rates of urban growth over the coming decade.

An estimated 2,500 families from 12 neighborhoods were permanently displaced in Tegucigalpa as a result of Hurricane Mitch without any other housing option available (IOM 1999). These families were first temporarily housed in macro-shelters in two locations in the city, both with similar access (or better) to jobs and markets than they had in their original neighborhoods. The consolidation of these families in these macro-shelters allowed for NGO's and other housing developers to easily identify potential demand for their projects.

Most of the funds for housing reconstruction pledged by donor governments were implemented through (mostly international) NGO's. Almost immediately it became evident that the largest obstacle to this reconstruction effort was the availability of land on which to develop 2,500 housing units. Despite the generous urban boundary established in 1979, a large percentage of which is still raw land, large tracts were scarce. Many potential parcels had disputed tenure, were not in risk free zones, or were not large enough to generate the necessary economies of scale required by the number of displaced families and the funds available. In addition, the Central District's municipality, Tegucigalpa's local government, lacked the ability or the political will to maneuver within the existing constraints of the land market and provide coordination assistance to the NGO's.[6] Confronted with limited options within the urban boundary, NGO land developers began to widen their search and located within the Amarateca Valley land with free and clear title, in environmentally safe areas, and in the dimension needed. Eventually six housing projects were built in this valley extending between 12 and 26 kilometers from the city's northern outskirts but within the Central District's municipal limits (see Map 1). This valley, with two rural villages and a population of 3,200 inhabitants prior to Mitch reconstruction, had been designated as an area for industrial expansion in 1976, but still remained largely unpopulated and undeveloped at the time the new settlements were built. The resettlement of a large urban population to this area far from the urban core has proven economically challenging for many dwellers, most of whom depended on the urban economy for jobs and commerce. Whereas in their previous locations, both before the hurricane and during the time they occupied the macro-shelters, displaced families maintained a reliable connection to prospective places of employment, there are now additional hurdles to an already difficult job market. For example, a worker commuting six days a week from the new towns to Tegucigalpa would spend US$5.16[7] (10-16 percent) of a median weekly household income estimated between US$33 and 50 (IOM 2001). The employed population of the new towns must therefore either absorb the transportation costs (time and money) to remain active participants in the Tegucigalpa economy or retool to become more competitive in the local job market.

By 2004, approximately 3,700 housing units and accompanying social infrastructure such as primary schools and community centers had been built in the Amarateca Valley, representing a resettled population of approximately 18,500 inhabitants. Although systematic surveys are lacking, anecdotal evidence suggests that a number of the dwellers of these new towns of Tegucigalpa have sold their new homes and returned to the city, or have established dual households, one in Tegucigalpa and the other in Amarateca.

Map 1. Tegucigalpa Urban Boundary and Amarateca Valley



Source: EPYPSA 2003

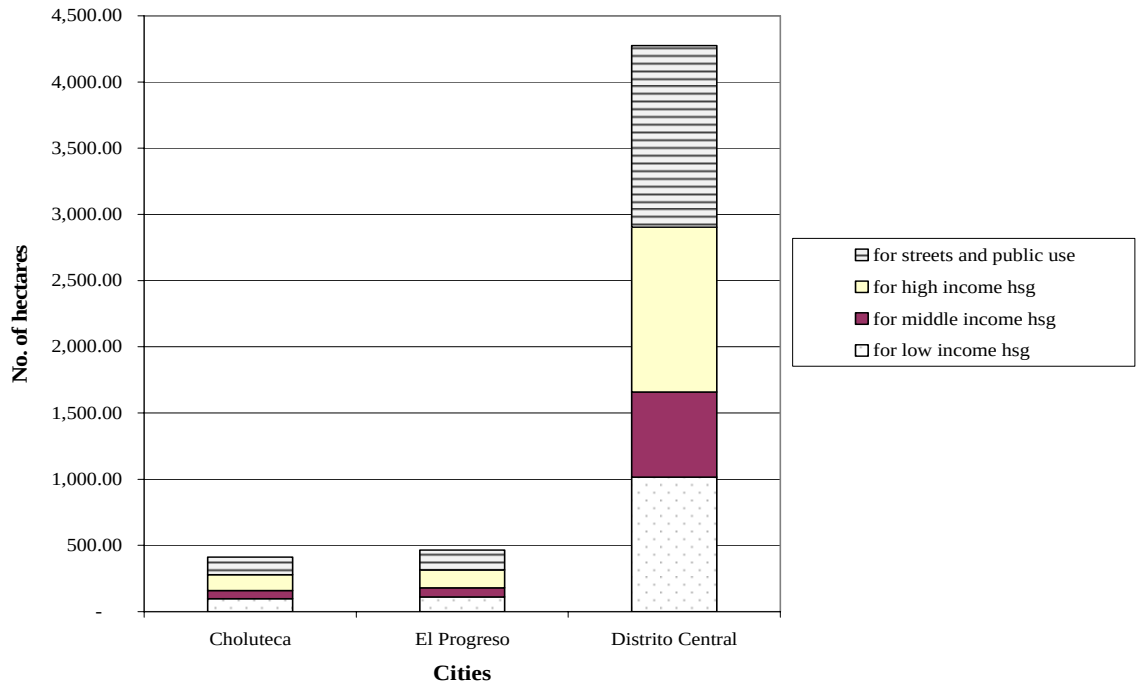
The absence of police and public safety as well as sustainable services further differentiates the new settlements from the rest of the urban population. One of the most negative developments has been the increase of crime and gang activity in some of the reconstruction settlements creating a serious obstacle to community development and further segregation of these citizens from the rest of the city. In similar terms, the lack of sustainable basic services is another factor which segregates these formal urban dwellers from other inhabitants of the city's formal sectors. Independent water and sanitation systems have been built to service these new settlements that are geographically outside the scope of the national water authority that provides services to the rest of the city. Given this institutional limbo, the long-term operation and maintenance of the newly constructed water and sanitation systems remains unclear.

Choluteca

The effects of the hurricane also ravaged the southern city of Choluteca located along the Choluteca River in the lower part of the watershed. This medium-sized city with 76,000 inhabitants (INE 2001a) was affected not only by the rains that fell, but also by the accumulated sediment and materials that drained down from Tegucigalpa and other parts in the upper watershed. The flooding that took place along the banks of the Choluteca River destroyed an estimated 25 neighborhoods and displaced approximately 3,000 families (CEDAC 1999a). Although many of these original homes had running water and electricity, most families did not have free and clear title to their land.

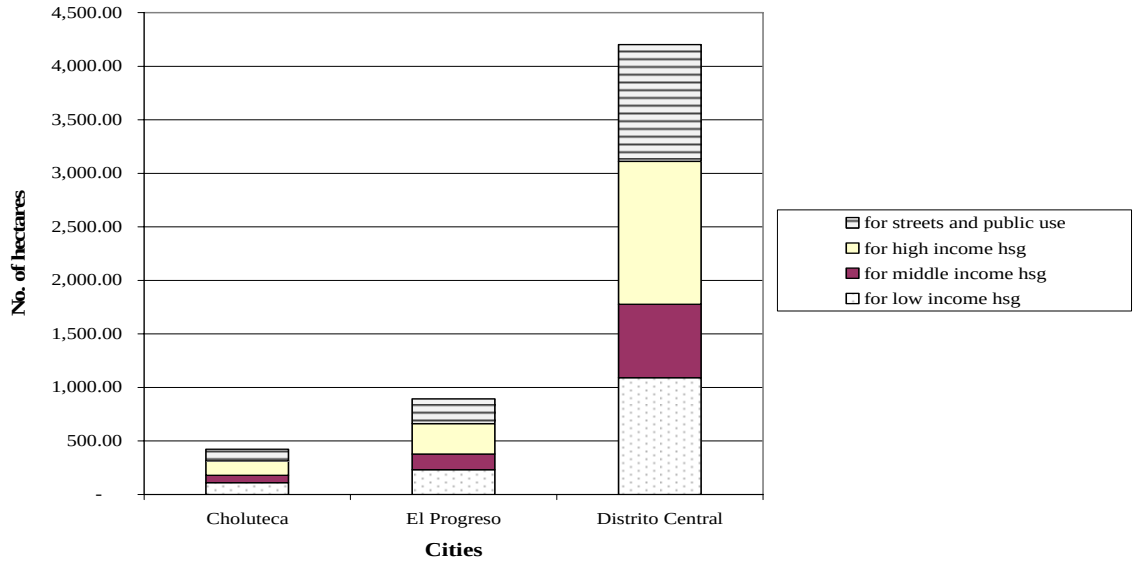
The settlement pattern in Choluteca, currently the sixth largest city in Honduras, was also shaped by a poorly functioning land market and unenforced regulations. However, the extent of widespread disputed land rights in and around Tegucigalpa did not materialize in this medium-sized city and the land demanded by a growing urban population, most pronounced in the 1970's and 1980's, in real terms did not exert the same type of strain on the formal land market as in Tegucigalpa (see Figures 2 & 3). While the urban area experienced high growth rates over the past 30 years, this represented an estimated demand of 30.9 hectares for residential use in any given year,[8] compared to ten times as much (314.0 hectares demanded annually) in Tegucigalpa. In addition, the existing urban limit in Choluteca provides ample room for incremental growth for a municipal district whose urban/rural population (64% urban and 36% rural) follows closely the national trends. The type of development pattern that ensued produced intensive residential land-use along the banks of the river and within the floodplain.

Figure 2: Estimated demand for urban residential land (1974-1988)



Source: Estimates based on census data (INE 1974, 1988), estimated land use requirements (Urban Institute 2004), and household income distribution (UNDP 2003)

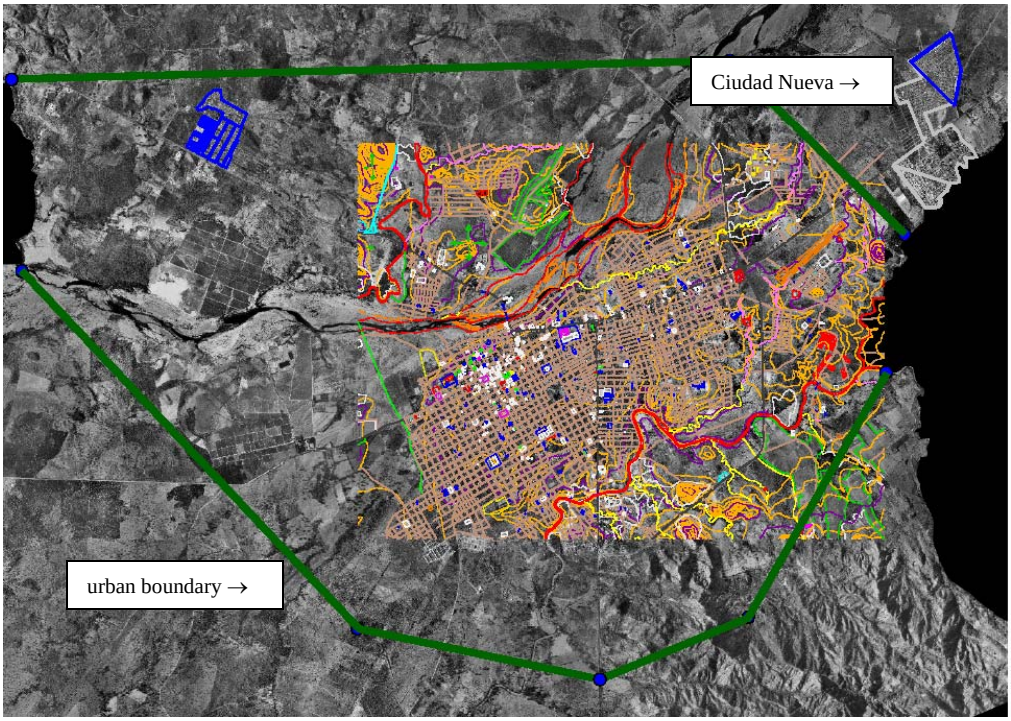
Figure 3: Estimated demand for urban residential land (1989-2001)



Source: Estimates based on census data (INE 1988, 2001a), estimated land use requirements (Urban Institute 2004), and household income distribution (UNDP 2003)

Unlike the experience in the country's capital, the municipal government in Choluteca assumed a direct role in coordinating the emergency relief and housing reconstruction. Because it was one of the hardest hit areas nation-wide, a great deal of relief and aid was directed to Choluteca resulting in five major housing developments that benefited a total of 2,928 families. Similar to the case of Tegucigalpa, the amount of reconstruction resources available for land and housing development presented an opportunity without precedent for the displaced low-income population. For the first time well-financed, viable demand for low-income housing entered into the formal land market. The largest of the projects to benefit displaced families was *Limón de la Cerca* (or *Ciudad Nueva Juan Benito Guevara*) consisting of 2,400 individual plots just outside the urban boundary (see Map 2). The municipality assumed an active role in contributing to the solution of homes by coordinating the purchase of this parcel from a local bank and serving as the co-signer of loans to beneficiary families. New infrastructure had to be provided, but unlike the case of Amarateca, the three-kilometer distance between the city and the newly constructed settlement made it feasible to connect the residential infrastructure to the existing urban network. In particular, trunk lines for the sewerage system were built to connect Ciudad Nueva's internal network to the city's existing wastewater collection and treatment system.

Map 2. Choluteca Urban Boundary



Source: 2002 Landsat image, elaboration by Jaime López Z.

The families who now live in Ciudad Nueva benefited from housing units with access to basic services and the potential to obtain free and clear title to their property, a situation that was not readily available in their original neighborhoods. Because the settlement is located along a major roadway leading to many of the largest agro-businesses in the area, accessibility to jobs was also enhanced by this location. One of the potential factors, however, that may encourage an out-migration from the project is public safety. Similar to Amarateca, Limón de la Cerca has become a magnet for increased delinquency and gang activity.

El Progreso

El Progreso (pop. 94,797) (INE 2001a), one of the most affected cities in the northern part of the country, first began to experience significant growth in the early part of the 20th Century as a result of international investments that financed the large-scale banana production and exporting industry. Over the past 25 years, agro-exports have been complemented by an increase in *maquilas*, or assembly-for-export factories, that have taken root along the corridor between Puerto Cortés, Central America's largest port, and Villanueva.

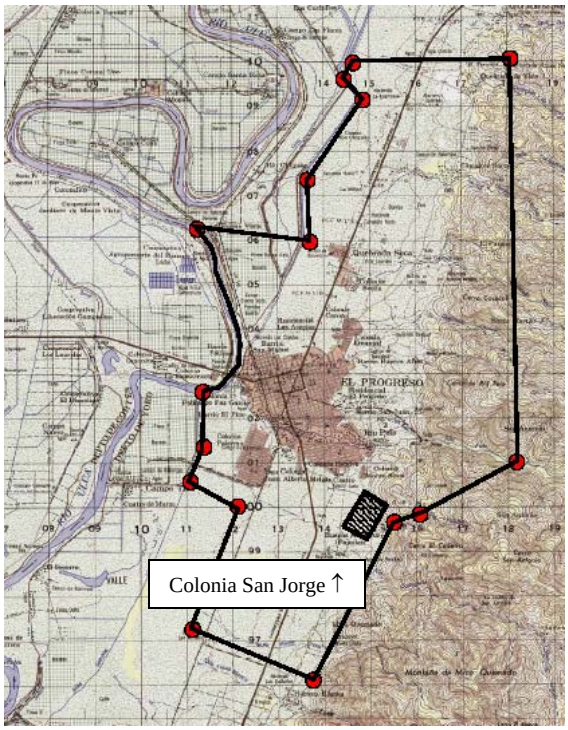
As the fifth largest city in the country, El Progreso's urbanization rate has jumped drastically in recent decades. Prior to 1988, only 55% of the municipality was urban, but by 2005, an estimated 81% of the population lived in the urban area (INE 2001b). This type of growth, more accelerated than that experienced by Choluteca, combined with the constraints of a poorly functioning land market and unenforced regulations resulted in the occupation of public and private land along the river. Despite having received certain services, the families that inhabited this stretch were not connected to the public water or sanitation systems, nor did they have legal title to their land. As in Choluteca, flooding caused

by the massive rains accounted for the displacement of approximately 1,000 families in neighborhoods that had expanded along the Ulua River and its tributaries (CEDAC 1999b).

The reconstruction of homes in both urban and rural areas of El Progreso received substantial investment from many donor and relief organizations. Similar to Choluteca, the municipality of El Progreso played an instrumental role in identifying, assembling, and purchasing tracts of land for reconstruction projects to take place. The largest of these projects was Colonia San Jorge, a 500-home development located adjacent to an urbanized part of the city's southern periphery well within the established urban limits and with close proximity to the main highway (see Map 3). In this regard, the development of this area is very similar to what may have naturally occurred without the emergency of the hurricane. Infrastructure systems in Colonia San Jorge were built, remain independent and are operated by a local water board providing a good example of decentralized management to community entities. This arrangement also reflects the distrust between inhabitants and service providers that resulted in the community's stated preference for managing its own basic services.

This 500-home project was developed by a single NGO, the *Comité de Reconstrucción de la Iglesia Católica (CRIC)*, which was recognized for having implemented one of the better practices during hurricane reconstruction for building an integrated subdivision. The land use plan of the subdivision was innovative and addressed many existing social and community priorities, such as a home for the elderly, ample open space, and additional community infrastructure. In addition, the inter-institutional coordination between the NGO, the municipality, and the beneficiary community was considered exemplary (CEDAC 2002). Because of its participatory approach, the community has consolidated with more success than other settlements as evidenced by the improvements made to most of the homes. The location of the development and easy access to urban markets by its residents is another factor that contributes to the long-term sustainability of this neighborhood.

Map 3: El Progreso Urban Boundary



Source: base map 1980, elaboration by Jaime López Z.

Understanding land market responses to large-scale public sector intervention

In all three examples, the reconstruction settlements contributed to satisfying unmet demand for land by families without access to the formal land and housing markets. Beyond satisfying needs for housing solutions, these projects have the potential to make a larger, more strategic impact on the evolution of each city, its economic development, and competitiveness.

The varied land market responses to the large-scale public intervention in each of the three cities provide some insight for understanding what factors may or may not promote change in land markets of developing countries. In comparing land market behavior during and after the reconstruction efforts, three phenomena distinguish the cases of Choluteca and El Progreso with that of Tegucigalpa: (1) the role of the municipal government, (2) the ability to assemble large tracts of land within or close to the urban boundary, and (3) the development of infrastructure.

As discussed above, the local governments in both Choluteca and El Progreso assumed pivotal roles in responding to the emergencies that arose after the hurricane, both in terms of organizing clean-up efforts and serving as catalysts for reconstruction activities. This type of leadership not only illustrates the potential of local governments in medium-sized cities, but also demonstrates that municipalities can be protagonists in the land market and land development process. In contrast, no significant coordination effort was provided by the Central District's municipal government. The result, as discussed earlier, was a combined effort by a multitude of NGO's and relief organizations to identify tracts of land suitable for the resettlement of displaced families.

Since the end of reconstruction, both of these medium-sized municipalities have reduced their participation in the land market and have focused on other priorities. Although they stay engaged in the consolidation process of the resettlement projects,[9] development of new housing is no longer considered pressing. The Central District has yet to define its role regarding the new housing settlements in Amarateca.

The ability to assemble large tracts within or near the urban boundary, the second element distinguishing these cases, is the result of the particular dynamics in each of the three land markets. In the cases of Choluteca and El Progreso, undisputed property was available at a reasonable distance from the city. In both these cases, the cities' urbanization trends have been enhanced by the settlement of low-income populations in safe conditions and with reasonable access to labor and urban markets. Continued urban growth in Choluteca and El Progreso has been influenced by these projects and continued land development has occurred in and around both reconstruction settlements.

In Tegucigalpa, however, a long-standing problem stemming from invasions during the 1970s and 1980s of private, communal and public lands increased property insecurity and made land with free and clear title even more scarce. Development that takes place in this context assumes these risks and includes them in their final costs, effectively pricing out a large sector of the population. As a result of this market imperfection, the large tracts of land needed in the capital for the reconstruction of homes were not easily located within the urban boundary. The human settlement expansion north of the city in Amarateca has proven to be contrary to prevailing market forces which are currently channeling urban growth towards the southern part of the city.

The third phenomenon that promotes change and differentiates these cases is the development of residential infrastructure (especially water and sanitation). This variable illustrates the importance of the availability of serviced land and its effect on the land market. In terms of basic services, the central water and sanitation authority *(Servicio Autónomo Nacional de Agua y Alcantarillado, SANAA)* manages service delivery in both Tegucigalpa and El Progreso.[10] Of these three cities, only Choluteca has a local service provider. Regardless of this difference, each of the systems is historically ill-equipped to generate their

own infrastructure investment. As a consequence, investment plans and infrastructure development in anticipation of demand for land is virtually nonexistent and highly dependent on donor funds. In the case of the SANAA system in El Progreso, for example, all large infrastructure investments over the past five years have been made with donor funds, while the Tegucigalpa SANAA water system damaged as a result of Hurricane Mitch was rehabilitated with funds from official bilateral cooperation. Similarly, Choluteca's local service provider has received significant investment over the past years via donor funding.

Consistent with this pattern, donor funds were again the principal source of investment for reconstruction settlements' infrastructure needs. In each of these three cases and as a consequence of large amounts of funding, land availability, not infrastructure costs, was the determining factor for subdivision development. For El Progreso's Colonia San Jorge, the most strategic land development of all three in terms of incremental urban growth, a decision was made by the CRIC to pursue an independent water delivery and wastewater collection system. As part of the community approach advocated by the NGO, the residential infrastructure would be managed by a local water board made up of community members. Nevertheless, the expansion of the city to the south has since given rise to additional developments in and around Colonia San Jorge. The case of Choluteca's Ciudad Nueva may be the most strategic investment of the three for promoting medium-term growth. Its proximity to the urban area allows it to be connected to the city's existing sanitation system via sewer trunk lines. Ciudad Nueva now serves as one pole of a land development corridor and provides a strong incentive for the development of tracts of land between the city and Limón de la Cerca. As demonstrated by increased investment and new subdivisions in this land development corridor, the land market is already reacting to this important investment.

The least strategic and most isolated infrastructure investment of all three cases is that of the new towns of Tegucigalpa in the Amarateca Valley. In this case, the land market was not effective enough at providing serviced land close to existing infrastructure and required the construction of independent water and sanitation systems for each new subdivision. The infrastructure developed in Amarateca is isolated and stand-alone to serve the resident population and minimal expansions. Without significant investment it will not provide incentives for new development. As for the sustainability of the infrastructure, the Amarateca system will need to overcome a very serious obstacle. Unlike the projects in Choluteca and El Progreso where the infrastructure provided to the housing settlements was either integrated into the larger network and annexed by the service provider or was supported by a technical assistance institution that permanently advises the local water board, in Amarateca there is no clear service provider to assure the sustainability of the system. Because SANAA owns and operates the water and sanitation system for the capital, the municipality has not had the need to develop institutional capacity or institutional arrangements to operate and maintain a water and sewerage system. The possibility of SANAA assuming responsibility for the system is not realistic since its institutional mandate is limited to the urban networks of the city. The alternative of having the municipality manage the services would first require institutional and organizational reforms within the local administration. The option of creating another local provider would also imply significant institutional reform and development. As a result, the constitution of a local water board is the most realistic option currently available although significant obstacles still exist and a great deal of capacity building would be required. Unlike San Jorge, no NGO has maintained a meaningful presence in these housing projects to advise and provide technical assistance to the local water board.

New policy instruments

Two recent legal reforms, the Property Law (2004) and the Territorial Organization Law (2003), have the potential for providing a sound and updated legal framework to improve the functioning of the land markets. In the case of the Property Law, the new framework provides a watershed opportunity to create a single property registry institution, modernize the adjudication of property rights, and increase secure tenure for many titles currently under dispute. The Territorial Organization Law complements and enhances the regulatory authority of local governments provided for in the Municipal Law (1990) while at the same time introducing new coordination mechanisms and requirements for integrating territorial

organization at the national, regional, and local levels. While the Property Law has the potential to make more far-reaching and structural changes than the Territorial Organization Law, the key limiting factor for both will be the implementation and enforcement capacity of their provisions. A number of exogenous factors exist that will determine the type of impact each law will have on land markets. These factors can be separated into two general categories of "setting up the system" and "making it operational".

In order for the provisions of the Property Law to be adequately enacted and enforced, two key variables must be addressed. First, the central government must provide an adequate budget for the creation of the new *Instituto de la Propiedad* (IP). Unlike other laws that create new institutions or commissions, this is likely to occur since the IP will be amalgamating existing property registries and offices[11] under one single institution causing a net budgetary impact close to zero. Second, the crucial aspect of instituting the real-based registry (*folio real*) is paramount to the modernization of the registry and the improvement of property rights. The wholesale transition from one registry system to another that, for the first time, links legal information to a geo-referenced land cadastre will be a formidable challenge to undertake. The full impact of the Property Law may depend on the success of this transition and the effective implementation of the *folio real*.

In terms of making the new property rights system operational, three factors will be pivotal. First, the law provides for decentralized decision-making by registrars to resolve a specific set of issues rather than submitting every problem to the court system as was required under the previous system. While this measure aims to streamline the process, its success will depend on the professional capacity of the new cadre of registrars. Second, for those issues requiring resolution through the court system, a functioning judicial system must be in place in order to adequately address these disputes. Finally, an important coordination effort must exist between the IP and local governments regarding land cadastre information. Municipalities currently have the most updated and legitimized information on real estate properties that they use for assessing and collecting property taxes. The *de facto* ownership recorded in the municipal cadastres needs to be compared and merged with the IP's cadastres. The mere legislation of this coordination is no guarantee; a concerted effort needs to be made to link the municipal cadastre database and the IP's cadastre.

In contrast to the Property Law, the Territorial Organization Law does not establish new institutions; rather, it more specifically defines the legal attributes of municipalities in terms of land use planning regulations and establishes coordination mechanisms at the regional and national levels. In terms of the Territorial Organization Law, its effectiveness also depends on "making it work". In the best case scenario, municipalities will continue to exercise their leadership and decision-making ability in establishing and enforcing land uses within their jurisdictions, while the National Commission for Territorial Organization and its representatives at the departmental level (Departmental Commissions for Territorial Organization) focus on coordinating policies through the regional hierarchy as necessary. Inasmuch as the implementation of the Territorial Organization Law does not contradict or undermine the authority of local governments to make land use decisions in a decentralized manner, the result will be positive. However, should the provisions in the Territorial Organization Law be utilized to undermine local authorities or should the national and departmental commissions be seen as an appellate body to resolve issues that are not agreeably resolved at the local level, then greater confusion in regulating land use will result.

As in other countries, the best way to test the limits of each law will be through the courts. Unfortunately, for countries such as Honduras that have a weak judicial system that offers highly unequal access to its citizens, extra-judicial factors are often brought to bear in the resolution of legal disagreements. A legitimized and transparent rule of law is important for land markets in particular, and for an open economy in general. Even though both of these laws has the potential to clarify transactions and increase transparency in the land market, without an efficient, effective, and impartial judicial system to support their enforcement, little positive advances will be made in eliminating the barriers that exist within a closed market.

Future roles and behaviors of key land market actors

As demonstrated with the cases of El Progreso and Choluteca, local governments are capable of playing a unique role in contributing to land development for low-income housing. In their most aggressive posture, evident during post-Mitch reconstruction, local governments can become deal-makers or partners in the land development process. The positive impact of municipality-as-partner or deal-maker notwithstanding, a larger, more strategic role for local governments should be encouraged. As shown by the three cases, the development of the larger housing projects produces an immediate impact in fulfilling sorely needed housing solutions, but also results in a more strategic impact with regards to shaping urbanization patterns of the city. To fully and successfully address this longer-term impact, local leaders in developing countries must begin to view land markets and land development not only as an exercise to satisfy basic residential needs, but also in terms of economic development and economic competitiveness. This paradigm shift has occurred in some places, but needs to be promoted more effectively in cities which will be absorbing the largest portion of urban growth over the coming years. Each new land development project needs to be evaluated for both its immediate social impacts as well as it long-term impact on the city's competitiveness.

As part of this goal for local governments to take a more strategic view of land development and the growth of their cities, they have an opportunity to promote open information regarding the land market. A large volume of scattered information exists in Honduras regarding the market, including zoned land uses, growth plans, infrastructure specifications and carrying-capacities, risk areas, areas designated for public use, transportation plans and road network hierarchy, demographic trends, assessment of property values, etc. However, because of partial access to information indicative of a captured economy, these figures have not been collected and analyzed systematically or used to their full potential. More equitable access to this type of aggregate market analysis can improve decisions made by public sector policy-makers as well as private sector consumers and investors.

Given the accessibility of technology, even small- and medium-sized cities in developing countries now have the ability to create, manage, and update large databases of geo-referenced information. Local governments can also serve as focal points for coordinating information and projections with other entities such as infrastructure providers, large public landholders (national government) and other institutional actors (universities, health and education centers). The opportunities for local government to meaningfully contribute to the non-regulatory aspects of the land market are reflected in the land market monitoring methodologies emerging from the National Center for Smart Growth Research and Education (Knaap 2004) in the United States. Land market monitoring, although conceptually simple, is a complex process to manage. The institutional obstacles existing in developing countries will require the adaptation of these models, but this type of permanent system would be preferable to the approach of taking periodic inventories of supply and demand. In Honduras, a permanent monitoring system has the potential to succeed if it is linked to other permanent systems that are already being used, consciously or not, to manage land. The permanent updating that occurs with the municipal cadastre system or the type of construction and subdivision permits being awarded by the municipal public works department are two examples of on-going efforts that could be enhanced by a land market monitoring system. The approach of performing analyses based on static inventories at certain periods in time runs the risk of becoming a periodic exercise disconnected from the dynamics of on-going land development. Especially in fast growing urban centers, such as the medium-sized cities in Honduras, land market analysis needs to be an integral part of local government activity. In a captured economy with deficient information systems, a tool such as the land market monitoring advocated by National Center for Smart Growth Research and Education would be valuable not only for the local government but also for the private sector investor as well.

Box 1.

The National Center for Smart Growth Research and Education, located at the University of Maryland in College Park, Md., is a non-partisan center for research and leadership training on Smart Growth and related land use issues nationally and internationally.

"Land Market Monitoring" is a phrase that describes the processes that can be employed by governments to monitor residential and other land uses within a jurisdiction. Done properly and updated regularly, a Land Market Monitoring system can improve planning by shedding light on the impacts of urban growth management policies, the current and future availability of development capacity, and assist in balancing residential development near centers of current or future employment.

In a Land Market Monitoring program, information on land and housing markets is regularly collected, stored in a geographic information system (GIS), and used to generate detailed and timely data on land and housing prices, developable land supplies, urban development trends, and other measurable qualities of urban environments.

Many jurisdictions have adopted urban growth boundaries or other regulatory restraints on urban development, but few conduct build-out analyses, estimate vacant land supplies, or monitor housing affordability. Such information, and more, could be readily available if local or regional governments established a Land Market Monitoring program.

The National Center for Smart Growth Research and Education is currently assisting the following state and local governments in applying LMM approaches to their growth needs:

- The Metro Council of Minneapolis-St. Paul, Minnesota
- Portland Metro, Oregon
- The Sacramento Area Council of Governments, California
- Orange County, Florida
- The Maryland Department of Planning

Source: www.smartgrowth.umd.edu

Under the promising new Property Law, private investment in the land market should increase as confidence in secure land tenure grows. The successful implementation of this law should produce an increase in land development activity, especially in large markets such as Tegucigalpa. As noted above, an important assumption in this scenario is that an effective judicial system will enforce these provisions. Even with more secure tenure, an ILD analysis of the land market indicates that the permitting process being implemented by the Central District and other public entities is complex and time-consuming. An estimated 1,080 days is currently required to legally purchase private property, subdivide and construct, at a cost of US$1,083 (ILD 2001). Without specific reforms, these bureaucratic impediments will continue to restrict effective land development in the larger markets.

Low-income families also have a greater opportunity to participate in the formal land market because of the regularization activities that are outlined in the law. This regularization program may realistically become limited by the state's capacity to process all claims and its ability to compensate for takings. A great deal of regularization activity should be expected in Tegucigalpa and along with it, the conversion of dead capital to active capital. If De Soto's hypothesis (2000) is correct, poor families will be able to use their land holdings to leverage additional credit and create new opportunities for creating wealth. The underlying assumption that the banking sector will be sufficiently diversified and have the management capacity to reach out to this new market of consumers will be tested and may not hold true. Access to formal title by informal sector dwellers alone cannot be the sole focus for expanding the credit market and eventually leveraging formally dead capital into new sources of wealth. Financial institutions

need to have the capacity to innovate and introduce financial products and systems to meet the needs of the new consumers, while new formal sector actors will require additional capacities (e.g., small business development, job training) in order to succeed in inserting themselves, surviving, and thriving in the formal economic market. The potential for greater insertion into formal markets by owners of dead capital exists, but new economic relationships and systems beyond the regularization of land titles need to accompany and cultivate this transition.

Conclusions and Recommendations

Poorly functioning land markets have wide-reaching consequences. In the immediate term, they constrain formal markets for land development and may even force economic actors to rely on alternative mechanisms to satisfy their needs. Over an extended period of time, inadequately functioning land markets can cause inefficient and ineffective urban growth and land-use patterns, forcing many of the poorest economic actors into high risk areas or into locations where services are costly to provide. As in the case of Honduras before and after Hurricane Mitch, the injection of significant quantities of capital during the reconstruction period helped to temporarily level the playing field on behalf of low-income city dwellers, but did not necessarily produce any structural or long-term improvements. In Tegucigalpa, even the generous levels of aid were not able to overcome certain barriers that existed in the land market, resulting in the development of housing projects in areas with little or no relationship to the expansion of the city.

The functioning of land markets, however, is not so much an independent system as it is a dependent market that reflects other types of institutional, legal, and economic systems. Because these systems may not be effective in developing countries, a careful analysis of the institutional capacity and framework is required to understand the factors that drive change in these land markets. In order to improve this context and contribute to the on-going debate that affects many fast-growing medium-sized cities throughout the developing world, the following recommendations are offered.

1. Reconstruction efforts are helpful to satisfy immediate housing needs, but not as useful for affecting structural constraints. In Honduras, the reconstruction efforts that followed Hurricane Mitch produced important impacts. In the housing sector alone, reconstruction was responsible for the largest housing boom of low-income dwellings in the country's history. It would be inappropriate, however, to expect that any reconstruction effort, which, when not accompanied by deep-rooted reforms, will not have an appreciable impact in terms of structural constraints to land and housing markets. ***Ultimately, the nature of the political reform process (i.e., long consultative processes and coalition-building), and the nature of reconstruction programs (i.e., fast-tracked investments) are incompatible***.

2. Local governments can be valuable partners in the land development process, but have a more important strategic role to play. When forced to address land and housing shortage, as happened after Hurricane Mitch, medium-sized municipalities provided valuable leadership as well as financial contributions. Municipalities, however, can (and should) play a much more strategic role in the growth of the city. With this objective in mind, ***municipalities should adopt a more integrated and long-term approach to land management that emphasizes the economic competitiveness of their territory***. By relating land markets more closely with economic benefits, key management tools and methods for monitoring the performance of the land market should have a better chance of being implemented. ***Permanent systems that help manage land market data need to be introduced*** as part of the local government's daily activities and could be easily complemented by existing databases and data collection practices. ***Increased awareness and capacity-building must take place among locally elected officials, policy-makers, and managers***.

3. Public information can help liberate a captured economy. Important market distortions occur in a captured economy where economic and political elites manipulate market variables for their own private gain. As the economic costs associated with captured markets are being understood so too are counter-balancing measures that promote more competitive practices in the private sector (Hellman et al

2000). ***One important contribution to limiting the captured economy is the availability of public information and market analyses***. For the land market, local governments are prime candidates for collecting the wide-ranging variables that impact land market behavior. This information will not only prove valuable for local policy-makers, but also with private sector investors as well.

4. Non-regulatory aspects are determinant factors for land markets in the developing world.
When land regulations exist, but are unenforced because of weak institutions, they have little or no limiting effect on land market behavior. For many countries with similarly weak institutions such as those found in Honduras, non-regulatory aspects will be determining forces in the land market. ***The importance of underdeveloped financial and judicial systems should not be underestimated.*** In order to make a long-standing impact in the way in which land markets operate, reforms in both the financial and judicial sectors need to be pursued vigorously.

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[1] A deliberate distinction is being made between urban boundaries and urban growth boundaries (UGB's). The former is a perimeter commonly established in Honduras by municipalities to determine the concentration of urban land uses. These boundaries, however, tend to be geometrically identified and exist for long periods of time, but are not designed or updated, as in the case of UGB's, to promote smart growth.

[2] Collective assets of the banking sector were estimated at US$3 billion in 2002 (IMF 2003).

[3] According to UNDP (2003) 63% of the national urban population lives below the poverty line.

[4] For example, a typical deed of sale specifies the following, "seller is owner of a lot located in Aldea Remolino, Municipality of Puerto Cortés, which has the following measurements and boundaries: to the north 44 feet and bounded by the property of Mrs. A. Paz; to the south 44 feet and bounded by the property of Mrs. N. Sánchez; to the east 29 feet and bounded by the highway to La Lima; and to the west 23 feet and bounded by the property of Mrs. A. Paz and Mrs. A. Membreño."

[5] CELADE (2000) identifies Honduras as one of four countries in the region with delayed urbanization rates. Consequently, these countries are now experiencing high levels of urban growth (3.0 to 4.0% annual growth) whereas other countries in the region with more stable urban populations are experiencing more modest rates of urbanization (1.0 to 1.9% annual growth).

[6] In the absence of municipal government leadership, the central government played a large role in the development of the reconstruction sites.

[7] Preliminary estimates indicate that families (with a median household income of US$133 to US$200 per month) are spending US$ 0.86 per person per round trip for public transportation to Tegucigalpa. Travel by public transportation can take up to 45 minutes to arrive at the city's outskirts.

[8] The estimated demand for urban residential land is based on estimated densities calculated by the Urban Institute (2004) for Villanueva, the fourteenth largest city in Honduras. Low-income settlements

are estimated to have a density of 158 persons per hectare, middle-income settlements 83.5 persons per hectare, and high-income settlements 43 inhabitants per hectare. The demand for land for public use was estimated using simple ratios of 15% dedicated to streets and rights-of-way and 20% for community infrastructure. The estimated proportion of what percentage of the new population would be low-income, middle-income, and high-income is based on the UNDP Human Development Report (2003).

[9] Significant disagreements have taken place between the projects (Ciudad Nueva and Colonia San Jorge) and their respective municipal governments since the end of reconstruction, but these dynamics are more closely related to the local political process and local political discourse rather than land market forces.

[10] Despite its legal mandate, the only sewerage system managed by SANAA is that of Tegucigalpa. In other cities where SANAA manages the urban water system, such as El Progreso, the municipality owns, operates and maintains the sewerage system.

[11] Six disparate registry entities and one cadastre institution from both the executive and judicial branches of government.

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