the invisible houses

re-thinking and designing low-cost
housing in developing countries

Gonzalo Lizarralde

THE INVISIBLE HOUSES

There is an increased interest among architects, urban specialists and design profess-ionals to contribute to solve "the housing problem" in developing countries. *The Invisible Houses* takes us on a journey through the slums and informal settlements of South Africa, India, Colombia, Honduras, El Salvador, Cuba, Haiti and many other countries of the Global South, revealing the challenges of, and opportunities for, improving the fate of millions of poor families. Stressing the limitations of current approaches to housing development, Gonzalo Lizarralde examines the short-, mid- and long-term consequences of housing intervention. The book covers—among others—the issues of planning, design, infrastructure and project management. It explains the different variables that need to be addressed and the causes of common failures and mistakes, while outlining successful strategies based on embracing a sustained engagement with the complexity of processes that are generally invisible.

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Rethinking and Designing Low-Cost Housing in Developing Countries

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Routledge
Taylor & Francis Group

NEW YORK AND LONDON

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LEARNING FROM THE POOR

Most of What Architects, Urban Specialists, Policy Makers and Design Professionals Need to Know About Housing Can Be Learned from the Informal Sector

> [I]t is pointless trying to decide whether Zenobia is to be classified among happy cities or among the unhappy. It makes no sense to divide cities into these two species, but rather into another two: those that through the years and the changes continue to give their form to desires, and those in which desires either erase the city or are erased by it.
>
> *Invisible Cities*, Italo Calvino (p. 30)

The "housing problem" in developing countries is not actually a problem of missing or inadequate dwellings, and its solution is not merely the provision of shelters. Rather, it involves *creating conditions in which people can live lives they have reason to value.* Much as in Italo Calvino's depiction of the invisible city of Zenobia, the solution to the housing problem lies in enhancing a settlement development process which, through changes over the years, gives shape to needs and desires. This can be viewed as either a self-evident statement, taken as a given by architects, urban planners and decision-makers, or as a complex argument that invites a careful examination of the relationship between these conditions and the role of all the professionals and decision-makers engaged in providing housing. In this chapter, I will argue that the latter is correct.

Sanchez's Journey Toward a Meaningful Retirement

Mr Sanchez wears the hat and thick *ruana* (a garment commonly worn by peasants in cold Latin American regions) typical of rural areas as he pedals a decrepit bicycle loaded with vegetables that seem far too heavy for a man of his age to manage on the hilly roads of central Colombia. When I met him, he introduced himself using his two family names—as was once the custom of rural Colombians. Ruben Sanchez Rodriguez, a soft-spoken older man with dark skin and a few missing teeth, resembles many other immigrants in Bogotá and its neighbouring cities. While his house seems quite conventional, sadly, the story of the man and his house is not.

Mr Sanchez and his wife had never been outside their once paradisiacal northern Colombian home region when, six years ago, paramilitary militias threatened their lives and chased them off their property. Victims of an on-going conflict between leftist guerrillas and extreme-rightist paramilitary forces, Ruben and his wife abandoned their multi-acre property, valuable crops and cattle to follow in the footsteps of their two sons and daughter by migrating to Bogotá, the capital city and economic hub of Colombia. Instead of moving to the capital's urban slums, however, the couple moved to a shantytown in Facatativá, a small city a few kilometres away.

Unlike many other rural migrants in poor countries, the Sanchez family was to stay in the slum for just a short time. Mr Sanchez applied for a housing subsidy and loan through a newly initiated municipal program and the family purchased a 40 m² unit on an 80m² plot in a new Facatativá settlement. The house was only partly finished and was delivered with no floors or ceilings, wall finishes, basic appliances and with doors unpainted. It had neither hot water nor a cistern to mitigate the effects of frequent water supply failures.

The two-story house was good, however, Mr Sanchez recalled. It had running water for most of the week, a sewage system and electricity and telephone service. With two bedrooms and an inside bathroom, the new brick house was somewhat small for the elderly rural couple, who dreamt of reuniting their extended family. It was particularly cold during the rainy season for a couple used to the northern region's tropical weather. An agricultural job near Facatativá allowed Mr Sanchez to save enough money to finish the house and build a backyard extension. Upgrading the house and building the extension was easy—like most men from the country, he had basic construction skills and was able to get some "young men from the region" to help him with the concrete structure, plumbing and electricity. Within a couple of years, the Sanchez family doubled the size of the house.

The extension proved to be very important for Mr and Mrs Sanchez. They built small rooms for their three grandchildren, and an extra bathroom. They are proud to say that their extended family now visits them quite often and their grandchildren stay with them on holidays. They also built a solarium whose translucent corrugated roofing material raises the temperature in the house (see Figure 1.1). "This is the space where my wife and I like to spend our free time," Mr Sanchez says proudly. "It is a small piece of the tropical home that we lost six years ago." Mr and Mrs Sanchez and their family lost the valuable assets gained over a lifetime, and will probably never be able to return to their farm or hometown. They also lost the place where their children were born and raised. They found themselves internally displaced at an age when being forced to start a new life from scratch is demeaning. Despite this, and unlike many millions of families in developing countries, Ruben and his wife were relatively lucky. They escaped, unharmed, a war that has claimed thousands of lives, and avoided the fate of the thousands of rural migrants who find themselves living in urban slums for several generations, where washrooms are public—if they exist at all—and obtaining drinking water means walking long distances. Unlike many other elderly rural peasants who are unable to find a job in Bogotá, they did not end up begging for money in an urban park or on a busy downtown street. After their humiliation and suffering, a housing solution made an important contribution to the resumption of a meaningful life which they value profoundly; one in which they can be useful to their family by helping to raise their grandchildren.

FIGURE 1.1   Mr Sanchez spends most of his free time in this solarium, which reminds him of the home from which he was forcibly evicted. While figures of internally displaced persons (IDP) can vary greatly from one study to another, it is estimated that in 2005 almost two-thirds of the world's IDPs were Colombian.

Slums and Informal Settlements: Part of the Problem or Part of the Solution?

There are various types of slums and informal developments within cities and across regions and countries. It is generally accepted, however, that they are the most tangible representation of qualitative and quantitative housing deficits and evidence of social inequalities and injustices, including segregation, exclusion, marginalization and violation of human rights. The UN-Habitat *Global Report on Human Settlements 2009* estimated that close to 1 billion people—equivalent to 36.5% of the world's urban population—live in slums.[1] This figure rises to 62% in Sub-Saharan Africa and 43% in South Asia, and is expected to increase to 2 billion people by 2030.[2]

Whereas there are ambiguous and controversial definitions of urban slums and other forms of informal settlements, it has been found that they are characterized by increased physical, social and economic vulnerabilities (see Figure 1.2). Chapter 7 will explore the causes of such vulnerabilities, but for the moment let's just state that they represent limited or insufficient access to three types of resources: "hard" resources, such as income, safe shelter, savings and food, and "soft" resources, such as education, insurance, political representation and security, along with services such as sanitation, clean water, roads, electricity, public transportation and health care. Slum dwellers and residents of informal settlements are therefore more susceptible to damage in the wake

FIGURE 1.2 Informal settlements are characterized by increased vulnerabilities. This house in an informal settlement in Cali, Colombia, is at high risk of being destroyed by landslides.

of natural disasters triggered by landslides, floods, earthquakes and fires (see Figure 1.3), to diseases and child mortality (resulting from exposure to toxic and industrial waste, indoor air pollution, polluted water, etc.) and to violence and crime. They typically rely on informal work, and have unclear land tenure and property rights, increasing their vulnerability to social injustices.

It is not surprising, therefore, that slums are often seen as limiting the human potential of their residents[3] and causing significant public health problems. It is estimated that half of the population of Africa, Asia, Latin America and the Caribbean suffer from diseases linked to inadequate water and sanitation.[4] Despite a recent worldwide trend recognizing the merits of urban agriculture, the increased presence of animals in urban slums is also frequently associated with infectious diseases that undermine public health.[5] Slums are also accused of reducing the efficiency of cities and the economic growth of countries. It is estimated, for instance, that every GDP dollar generated in Chile's capital, Santiago, requires 60% more energy than a GDP dollar generated in Helsinki, Finland.[6] More surprisingly, some authors have argued that, contrary to common belief, living in slums is also a financial burden to their inhabitants. In a study conducted in the mid-1980s, housing specialists found that "on average, dwelling units in the squatter sector of Manila would rent for 11 per cent more or sell for 23 per cent more, had they been in the formal sector" (p. 197).[7]

Slums have provoked various responses from governments and decision-makers, including demolition, forced eviction, relocation, rebuilding and upgrading. While the

FIGURE 1.3 Informal settlements are in constant transformation. This one, in Port-au-Prince, Haiti, was destroyed and rebuilt after an earthquake in 2010 that killed more than 200,000 people.

"bulldozer approach" is now largely repudiated by human rights' defenders, scholars and experts, it was a widely applied government policy before the 1980s, and is still practiced in cities in China, Zimbabwe and some other countries.[8] Mike Davis, a writer and activist, refers to this phenomenon as a "contemporary Haussmannian approach" and estimates that more than 750,000 people were evicted in Harare (Zimbabwe) in 2005, and about 500,000 in Jakarta (Indonesia) between 2001 and 2003. The Centre on Housing Rights and Evictions estimates that 5 million people in the world are still forcibly evicted every year.[9] This book will instead argue that slums and informal settlements are themselves both part of the problem and part of the solution to the housing problem. But let's consider first some common myths often associated with urban informality.

Slums and Informal Settlements in Developing Countries are Decaying Environments

The term "slum" carries pejorative connotations in both developed and developing countries. In 19th-century Europe, the term was used to describe decaying environments of squalid and wretched character.[10] This is, however, an inadequate description of the reality of most informal settlements and slums in developing countries today. Most of them are actually vibrant and dynamic neighbourhoods on a path of constant improvement, consolidation and regularization. In the book *The Myth of Marginality*,

Janice Perlman, an anthropologist with extensive experience in the favelas of Rio de Janeiro, describes Brazilian informal settlements this way:

> Beneath the apparent squalor is a community characterized by careful planning in the use of limited housing space and innovative construction techniques on hillsides considered too steep for building by urban developers. Dotting the area are permanent brick structures that represent the accumulated savings of families who have been building them little by little, brick by brick.
>
> (p. 1)[11]

All the Urban Poor Live in Informal Settlements

Again, this myth is only partially true. In reality, not all slum dwellers are poor; instead, the residents are a heterogeneous group that includes professionals, merchants, employees, entrepreneurs, gangsters, pensioners and university students. Besides, in many cities, there are more poor people living outside slum areas than within them.[12] This is extremely important in analysing urban challenges and urban resilience, since it means that cities are more capable of absorbing the poor than is usually believed.

Nothing is Worse than Living in a Slum

Contrary to common belief, slums are not the sites of the worst living conditions in developing countries, and they do not always accommodate the poorest of the poor. In most developing nations, the majority of the poorest citizens still live in rural areas[13] and remote locations, where they have limited or non-existent access to health services, schools, infrastructure and jobs. According to World Bank specialist Martin Ravallion, "urban areas account for less than half—about 30% on average—of the poor" (p. 435).[14] It is true that the poor urbanize faster than the population as a whole in many developing countries. However, if transition countries in Eastern Europe are an indication of what may eventually happen in poor countries, the status of the rural poor will not improve quickly. If trends witnessed since 1998 continue in transition countries such as Belarus, Georgia, Hungary, Lithuania, Moldova and others, researchers predict that "the share of rural poverty in total poverty will further increase in the future" (p. 2174).[15] This tendency is confirmed by poverty specialist Ann Tickamyer, who argues that "rural poverty remains the dominant form of deprivation for the world's poor and, despite rapid urbanization, is projected to continue for many years to come" (p. 416).[16]

According to a UN-Habitat report, almost half of the rural population in developing countries lives below the poverty line, while this is true of less than a third of the urban population.[17] Poor rural residents in Sri Lanka, the Congo region, Colombia, Angola and many other countries are often affected by war and violence, and suffer from additional vulnerabilities, including decreased life expectancy and higher rates of child mortality[18] and illiteracy, among others.

The rather romantic view that slum dwellers are suffering the inconveniencies of informality, while missing an enviable quality of life in the country within pastoral landscapes abounding with productive animals and flourishing crops, does not stand

up to serious debate. In fact, conditions for the rural poor remain very harsh when compared to the urban poor.

Slums and Informal Settlements are Places of Misery and Despair

In most of the informal settlements in which my colleagues, my students and I have worked, we have found residents busy with activities such as working, buying and selling goods, taking care of children, cooking, preparing for celebrations or attending church. In Port-au-Prince, Mumbai and Cape Town, we were particularly impressed by the schoolchildren's impeccably clean uniforms, and in Rio de Janeiro's favelas we found happy children flying kites, and devoted mothers and fathers playing with their children. In Colombian slums, we found groups of men meeting to watch a soccer game, and families preparing celebrations. These are not the places of misery and despair that many expect to find (see Figure 1.4). Perlman reveals the strength of character she found among favela residents she interviewed: "No matter how many obstacles they face," she argues, residents were "full of hope for the future." Then she adds, "Their optimism is contagious– while few think that life in Brazil or Rio will become better in the next five years, a majority think that their communities will be better and almost everyone thinks that their own lives will be better" (p. 22).[19]

Residents are Waiting for the First Opportunity to "Escape" From Slums and Other Informal Settlements

While there is little doubt that the majority of people living in informal settlements would like their living conditions to improve, the belief that slum dwellers dislike living in slums and that they would like to "escape" from them has led to poor housing solutions and policies. There are, in fact, several reasons why slum dwellers like living in their settlements. Probably the most significant is the strong network of friends,

FIGURE 1.4   Slums are not places of misery and despair. Here, enthusiastic children pose for a photo in Gugulethu, an informal settlement in the Western Cape, South Africa.

relatives, service providers and clients they find there who play a fundamental role in their lives and reduce some of their economic and social vulnerabilities. When living in close proximity, friends and relatives take care of children while parents are at work; young friends and relatives care for the elderly; the store manager provides credit to a family going through financial difficulties; people in the neighbourhood provide security for children and teenagers; friends and acquaintances help a car owner repair his broken vehicle; godparents living nearby can attend family celebrations and exchange presents; and, generally, most residents feel comfortable living with those who share similar backgrounds, cultural references, life experiences and status. Fragmenting or disturbing these social networks is dangerous in any society, but it is particularly catastrophic for vulnerable communities in impoverished areas.

The "Formal" and "Informal" Sectors and Other Semantic Problems

Settlements, industries, economic sectors and jobs are typically categorized as "formal" or "informal." Informality is often a residual notion whose meaning is derived in relation to something else, and often by specifying what it is not.[20] The term "informal" is used indiscriminately to describe an attribute (given to a company, a sector of the economy, an industry), a way of doing things (an informal process, for instance) or a way of functioning in a particular context.

   The informal sector thus comprises a heterogeneous group of unregistered enterprises and employees making a living through informal transactions and income-generating activities.[21] These are typically conducted in the absence of formal contracts, rights and regulations.[22]

   It is estimated that fully 43% of the Gross Domestic Product (GDP) of African and Latin American countries is produced in the informal sector.[23] "About 85 per cent of all new employment opportunities around the world occur in the informal economy," according to a UN-Habitat report.[24] This means that the informal sector harbours the most dynamic and significant group of industries in the world. Besides, different types of informal activities regularly collide. The majority of slum dwellers in developing countries earn their living from informal sector activities, and the informal construction sector makes a significant contribution to building most informal and squatters' settlements (see Figures 1.5 and 1.6). It has been found that the informal sector produces about half of the world's housing stock.[25] In the following chapter, we shall see that informality is, above all else, a strategy for adapting to a hostile environment. However, it is important to stress here that classifying human settlements, the building industry and the economy in two categories (formal and informal) is an arbitrary and simplistic approach. Most specialists now recognize at least four problems with this binary classification.

1   *Blurred boundaries:* The boundaries between formality and informality are often blurred in the construction industry, the economy and urban morphology. For instance, formally planned roads and plots are sometimes occupied by informally built structures and, over time, informally built settlements acquire some characteristics of formality, such as addresses, public investment and legal infrastructure. Legally established construction companies subcontract informal workers, while some

FIGURE 1.5   Formality and informality sometimes merge. This is the case in this transition zone between the well established Rio de Janeiro neighbourhood of Botafogo and the Favela Santa Marta.

construction companies only partially comply with administrative, fiscal and legal requirements. Legal retail stores sell illegally imported products, while informal vendors on the street sometimes sell "clean" goods. Additionally, the geographical boundaries between the formal and informal economies are also indistinct (see Figure 1.5). Entrepreneurs located in the slums trade products and services in formal city sectors, while formally established companies distribute goods to retail stores in informal settlements. Finally, a significant proportion of formal workers live in informal settlements and informal workers often operate in established neighbourhoods.[26]

2   *Subjective criteria:* The criteria used to classify settlements, companies, workers and procedures as formal or informal are often arbitrary. For instance, housing units are typically considered informal when occupants do not have a legal title; however, security of tenure is not always necessarily linked to legal titles. Structures built without permits are often considered informal; yet, the vast majority of renovations in formal construction projects are conducted without these permits. Besides this, stores and companies that are generally considered informal sometimes pay certain taxes. A common example of subjectivity, which has a strong influence on architectural discourse, captures this phenomenon: vernacular architecture is typically built informally, but it is seldom subject to the same prejudices of illegality

FIGURE 1.6 Informal settlements and informal labour are often found on the same site. Owners of this workshop in an informal settlement in Mumbai, India, live in the unit's second story.

that are applied to urban squatter settlements. Two standards of assessment seem to apply, one to the rural vernacular and one to the urban informal.

3 *Prejudices*: Characterization as "formal" or "informal" usually implies a biased scale of values.[27] Informality is often associated with chaos, disorder, illegality, insecurity and inefficiency. Yet, as we will see in the coming chapters, the informal construction sector is largely organized and efficient, informal settlements are not necessarily chaotic, and informality and illegality do not necessarily go hand in hand. Pejorative representations of informal settlements, companies, workers and construction have largely been used to justify and legitimize evictions, segregation, persecution and other forms of social injustice.

4 *Context specificity*: Different cultures, sectors and groups have varying levels of tolerance and differing perceptions of informality, making the classification even more arbitrary, biased and impractical for decision-making. Consider labour conditions: hiring employees without formal contracts is not typically considered a crime and is commonly accepted in agricultural activities and within rural communities. The contribution of children to family businesses has traditionally been tolerated (and even promoted) by parents and communities. These conventions do not find the same acceptance in some urban contexts, where they may even be illegal. Finally, community-based organizations sometimes operate without all of the registrations and credentials required in the formal sector.

You might therefore be surprised that, despite these significant limitations, this book uses the terms "formality" and "informality" along with some other terms that have been controversial among scholars and specialists. These terms include "beneficiaries" and "users," which—some experts believe—imply an unequal balance of power between those who "provide" and those who "use" (receive) aid. Because this is not a book on semantics, but rather one determined to highlight the value, skills, importance and qualities of informal workers, slum dwellers, vulnerable communities and community-based organizations, I hope that readers will permit the use of these terms, trusting that I use them without prejudice. There are four additional good reasons for using these terms. First, there are no scales that effectively describe the many gradients (shades of grey, so to speak) between formality and informality in urban morphology, city structures, housing construction, industrial and commercial activities, labour practices, etc. Second, informality is used here as a general term to describe a way of functioning and the strategies used by the poor to secure income, shelter, security and services. As such, it describes a heterogeneous group of mechanisms of resilience and forms of operation commonly used by poor communities and/or individuals. It also conveniently communicates common patterns that are applicable in a variety of contexts. Third, by opposing formal companies, construction and interventions, "informality" (as a term applied to housing, settlements, companies, etc.) is useful in explaining intertwined mechanisms of response and adaptive measures to the environment that rarely occur independently. Finally, I prefer to use the terms "informal" and "informality" as shorthand for what is, in reality, a loose collection of concepts, rather than other commonly used terms such as "marginal," "spontaneous," "irregular" and "subnormal" (e.g. subnormal agglomerations). As we will see, there is very little in informal settlements and the informal sector that is marginal, spontaneous, subnormal or irregular.

Why Some Ideas for Solving the "Housing Problem" Have Failed

Access to adequate housing is an international human right. This is more than a rhetorical argument. In 1966, the United Nations General Assembly adopted the International Covenant on Economic, Social and Cultural Rights, which recognized the "right of everyone to an adequate standard of living for himself and his family, including adequate food, clothing and housing, and to continuous improvement of living conditions."[28] Recognition of housing as a human right has not, however, necessarily translated into sufficient projects or sound policy. While the proportion of urbanities living in slums has been reduced in most developing countries, their actual numbers have increased. In 2007, there were about 29.9 million people living in slums in Bangladesh, 45.3 million in Nigeria and 45.7 million in Brazil. This corresponds to roughly 70%, 65% and 30% of the total urban population in these countries, respectively.[29]

Given that housing is such an important factor in personal well-being and in that of society as a whole, why is there an insufficient supply of adequate housing for all the inhabitants of developing countries? This section and Chapter 3 address this fundamental question by pointing out the difficulties of providing a large quantity of quality houses. During housing crises (particularly those due to the mass destruction

of human settlements during disasters), it is common to find well-intentioned architects, urban planners and design professionals who have "a good idea" for solving the housing problem. Newspapers and conferences abound with ideas such as "the government should build houses for the poor," "the government should provide them with land so they can build their own houses," "the poor should receive financial help for housing construction," "a new village must be built to house poor people," and so on. However, easier said than done, these ideas fail to acknowledge their inherent limitations. The following review of housing strategies shows that many good ideas for providing housing have failed utterly, and that devising solutions to the housing problem has been, for most developing countries, a major challenge that has proven difficult to overcome.

Providing Public Housing Through Turnkey Projects

It is often argued that governments interested in improving the well-being of their citizens and respecting human rights should provide affordable housing for the poor. In fact, even before Member States of the United Nations declared housing to be a human right, several governments in developing countries, including India, Mexico, Kenya and Tunisia, among others, had started ambitious public programs to achieve widespread access to housing. In fact, this strategy became national policy in many developing countries, and it is now accepted that public provision of turnkey housing projects is a first-generation policy for solving the housing problem.

This generation of housing policy began immediately following World War II and continued until the 1970s, when the World Bank entered the housing arena.[30] Governments opted for demolishing squatter settlements and making a financial commitment to replacing them with "decent" solutions, principally through the mass construction of units, which were then rented or sold at subsidized prices. Numerous slums were cleared during this period. A well-known case was the favela of Catacumba in Rio de Janeiro in 1970, which was replaced by mid- and high-income residential projects that today form part of a popular tourist destination. Public housing projects in many countries (including Algeria, Colombia, Mexico and many communist countries) often took the form of "new developments" of mass-produced mid- and high-rise buildings located on empty land on the outskirts of urban centres. In many countries, including Cuba, the quest for mass production and economies of scale favoured prefabrication techniques, which typically used precast concrete components in the construction of four- to eight-story buildings.

The policy proved to be inadequate, however. At least seven factors contributed to its failure in countries such as India, Colombia, Mexico, Jamaica, Nigeria, Vietnam, Algeria, Tunisia, among others, when:

1   Government agencies and institutions proved to be inefficient builders; in the end, the core "business" of governments is governing, not building and administering buildings.
2   Resources were not readily available in political environments where health, safety and other social issues were in direct competition with housing provision.

FIGURE 1.7 Direct provision of public housing has proven to be largely disappointing and the policy is now eschewed in most developing countries, with the exception of some communist countries, such as Cuba, where this public housing project was recently built for the inhabitants of Sagua.

3   Public housing programs opened the door to corrupt practices; in some cases, public housing was provided only to civil servants or the military. It was also used to further political agendas and for electoral purposes, often benefitting middle class rather than poor residents.
4   Projects were too often developed on inexpensive land, usually in remote locations where jobs, services and infrastructure were not readily available, thus perpetuating insufficient living standards for the poor. Describing public housing developments in Hong Kong, Mike Davis stated: "The incompatibility of peripheral, high-rise housing with the social structures and informal economies of poor communities is, of course, ancient history: it's an original sin repeated over decades by urban reformers and city czars everywhere" (p. 64).[31]
5   Limited resources did not allow governments to offer subsidies to all who needed them, leaving them unavailable to the poorest families.
6   Even with significant subsidies, affordability still eluded the majority of the poor.[32]
7   Governments found it easier to clear slums than to provide housing. If we believe United Nations estimates, governments were annually destroying more low-cost housing units than they were developing.[33]

Today, the policy of direct provision of turnkey projects is rarely adopted in developing countries. Some exceptions include China and Cuba, which, as socialist states, still consider housing to be an integral component of its welfare system (see Figure 1.7).

Let the Poor Build for Themselves

Frustration with the limited success of public housing led to second-generation housing policy. This time, there was increasing enthusiasm for interventions based on self-help construction. An interest largely generated by John Turner's[34] view of human settlements, which held that since the great majority of households in developing countries were already producing housing solutions for themselves, they could contribute to the construction of their own houses within organized self-help housing programs. Turner, a British scholar trained in architecture, considered housing "as a verb," thus conveying the idea that housing was not simply a *product* but also a *process* in which end-users could play an important role. The self-help approach presupposed that, by involving the users in production, construction costs could be reduced to the point that its beneficiaries could become homeowners.

The World Bank, in particular, espoused this cost-reduction prospect and adopted (or rather "hijacked," according to some observers) the self-help principles to institute, in 1972, a policy that encouraged governments to deliver sites-and-services. The approach was also adopted by the Inter-American Development Bank in Latin America and is now considered to be the "second generation" of international housing policy. According to the bank, governments would develop land and offer plots with access to basic public services to beneficiaries who would then build their own units, thus considerably reducing costs.

Some analysts have seen this approach as a withdrawal of the State from its responsibility to improve housing conditions for the poor, rather than as a tribute to their skills and potential. Some consider it to have been based on a view of the users' involvement portrayed in the original self-help works that was romanticized. Regrettably, this is partly true. Today we know that a great share of self-help construction is not really done by the users themselves, but rather by informal workers and other paid help.[35]

Housing specialist Charles Choguill reports that the results of this strategy, applied as national policy in many countries, were largely disappointing. Let's consider some of the reasons. First, even with a reduced government investment, sites-and-services were still too expensive for at least 20% of most urban populations.[36] Second, developing this type of large-scale project was difficult, particularly due to administrative and legal barriers to land development (see Chapter 3 for a detailed analysis of the problems associated with land markets). Third, this approach implied that governments should agree to support lower housing standards. This caused politically expensive ethical debates in many countries. In fact, some sites-and-services were considered little more than government-supported slums. Fourth, during this period, cities were not really perceived as efficient centres of production (as they are now), but rather as drains on investment and subsidies that attracted rural migrants. This narrow view of urban problems did not help sustain support for this type of policy and was, in fact, one of the most significant contributing causes to the failure of World Bank urban policies in the 1970s. Fifth, projects faced major challenges in providing adequate sanitation. Although underground sewage and water supply systems are very expensive, they are barely visible to the electorate once the projects are completed. This reduces the value these projects hold for politicians and their electoral agendas. Sixth, in many cases, beneficiaries did not like the new locations,

FIGURE 1.8 Sites-and-services has been largely abandoned as a strategy for housing development; however, its basic principle, providing services to unoccupied plots, was recently applied in this "serviced" township of Mfuleni in Cape Town, South Africa.

so they sold the plots and returned to the slums. Finally, in sites-and-services projects, housing provision was dissociated from employment creation, which affected the strategy's popularity among politicians.[37]

Due to major difficulties with the approach, the World Bank eventually abandoned the self-help (sites-and-services) policy in the mid-1980s. Around the same time, the Inter-American Development Bank also recognized that sites-and-services projects were not working as expected in Latin America.[38] It is estimated that from 1972 to 1981, the total output of project-based programs was only 10% of what was required in developing countries.[39] Despite these conclusions, a form of sites-and-services strategy was recently implemented in the Cape Town townships (South Africa). Residents were provided with land titles, roads, electrical and sanitary services (one prefab toilet per family), and users were expected to build their own shacks on these lots. The approach has had mixed results (see Figure 1.8). Whereas it has permitted shelter to thousands of families, it has raised significant criticism regarding the quality of the settlements that are produced in this process.

Improving Conditions in Urban Slums

The remarkable failure of public housing and the unambiguous evidence of the unsatisfactory effects of slum clearance and relocation motivated housing specialists and policy-makers to opt for in-situ upgrading of slum areas. This approach commonly

involves improving existing infrastructure and addressing the complex issues of land tenure. It recognizes that upgrades to infrastructure—notably sanitation—profoundly improve the living standards of slum dwellers. Infrastructure investment usually includes improvements to water supply, sewage systems, electrical service and roads. In some cases, it also includes improvements to public transportation, open spaces and community services and facilities.

Securing land tenure not only reduces legal vulnerabilities that facilitate eviction and displacement, but also motivates slum dwellers to accelerate house completion and upgrades. As we shall see in Chapter 3, land tenure is a critical component of the housing equation. However, we will also discover that slum upgrading does not necessarily have to target individual legal ownership. Collective tenure and mechanisms to improve conditions for renters can (and must) also be envisaged. Take the case of slum upgrading conducted under World Bank programs in 1985 in Dharavi[40] (Mumbai's most populous slum and home to more than 800,000 inhabitants[41]). These initiatives were not based on legalizing tenure at the individual level, but rather were achieved through organizing and consolidating cooperatives (see Figure 1.9). In any case, the benefits of slum upgrading often include: reduced disturbances to the social and economic life of communities; enhancement of economic development in informal settlements (see Figures 1.9 and 1.10); and preservation of slum dwellers' invested capital. It also guarantees that the *intended* beneficiaries remain the *actual* beneficiaries of interventions and investment.[42]

FIGURE 1.9 Slum upgrading accelerates housing completion and facilitates the creation of home-based income-generating activities like this barbershop in Dharavi, probably Mumbai's best-known slum.

In the following chapters we will revisit the advantages and controversies around slum upgrading strategies. However, it is important to highlight here that the cost of these operations is usually tremendous. Housing specialists Bruce Ferguson and Jesus Navarrete estimate that the cost of laying infrastructure in slum-upgrading programs is two to three times the cost of providing infrastructure to new formal developments.[43] Resolving land tenure issues and administrative barriers is also very expensive. It is estimated that it would cost US$18 billion annually for 16 years to improve the lives of 100 million slum dwellers and to provide adequate solutions for the roughly 600 million people who may otherwise become slum dwellers by the year 2020.[44] As a consequence of the increased cost of slum upgrading, governments have only been able to afford this approach on a reduced scale. It is now commonly believed that "the best way to deal with urban slums is to decrease or stop their formation and thereby avoid fixing them retrospectively at high cost" (p. 204).[45]

Nostalgia for Productive Small Towns and Villages

Housing deficits and slums have often been associated with rapid and uncontrolled migration to urban centres. There has been a widespread belief that developing countries can (and should) reduce the pressure for low-cost housing in major cities by stopping migration from rural areas to urban centres by creating migration buffer zones, notably small towns and villages. This argument is reinforced by the conviction that slums

FIGURE 1.10   Slum upgrading typically includes public investment in infrastructure and land regularization. Originally a slum built through land invasion, this settlement in Bogotá is now recognized as a "formal" city neighbourhood (*barrio*).

FIGURE 1.11   Traditional lifestyle in villages and small towns, such as this village in Kutch, India, have for decades inspired professionals, decision-makers and politicians. However, the results of attempts to mimic villages in new developments have been disappointing.

and informal settlements suffer from vice and crime (prostitution, promiscuity, drug addiction, drug trafficking, organized theft, etc.), which are supposedly rarely found— or are at least less evident—in traditional villages and rural areas. The argument suggests that rural residents become "contaminated" on arriving in urban centres, particularly in slums (a perception that has been challenged by many experts, including favela-specialist Janice Perlman in her books *The Myth of Marginality*[46] and *Favela*).[47]

According to this logic, the problem of inadequate housing in urban centres can be reduced by creating productive centres in small settlements, and thus attracting and retaining rural residents. These settlements can be provided with schools, agricultural support and healthcare centres, so as to recreate traditional (and highly autonomous) communities. This approach has gained popularity in Southern India, the Caribbean and Africa, where it is seen as a practical way of returning to the "roots" of African, Caribbean and Indian values and "ways of life" (see Figure 1.11). In a recent conference on post-earthquake reconstruction in Haiti, the Haitian president's advisor on urban affairs claimed that by creating productive villages (one of them with a university), not only would the housing pressure on Port-au-Prince be reduced, but residents would also have the privileged opportunity of returning to traditional occupations and values. The same argument has been widely promoted by Ivory Coast expatriates in Canada hoping to develop investments to improve the quality of life of young Ivoirians. Journalist and India specialist Edward Luce reminds us that Mahatma Gandhi espoused this approach

for the Asian subcontinent, having found core Indian values in its villages. However, Luce himself is hardly optimistic about the approach:

> India is slowly urbanizing and it is hard to imagine what could stop the continuing expansion of its cities. But *Gandhians* continue to believe the village should occupy a holy place at the centre of Indian nationhood. Their influence continues to undermine attempts to provide better planning for the cities.
>
> (p. 10)[48]

In fact, current urban specialists and economists are convincingly challenging the romantic idea that villages are non-violent, homogeneous communities where members of a cohesive society share edifying values. Discussing gender inequalities, particularly the increased infanticide and "foeticide" of girls in India, Luce argues that: "Naturally, the problem is worse in villages [where] arranged marriages and functional illiteracy are still the norm." According to estimates presented by the same author, "fifteen per cent of girls in India's poorest five states get married at or below the age of ten. Clearly, almost all of this takes place in the villages." He adds: "Children born in the village are also almost twice as likely to die below the age of five as those born in the city" (p. 315).[49]

Unlike other strategies presented in this section, this particular one was not commonly promoted as national housing policy by international financial institutions (World Bank, Inter-American Development Bank, International Monetary Fund, etc.). However, the experience of enthusiasm for village development followed by disappointment has occurred in most African and Latin American countries. During the 1970s, in an attempt to reduce rural migration to Cairo to alleviate pressure for urban housing, the Egyptian government adopted a plan to develop New Towns (towns that would have industries to provide employment for the new residents) and New Communities (village-type settlements near large urban centres). However, new towns such as Tenth of Ramadan became a colossal liability. A study by Gil Feiler found that "in 1983 a network of roads suitable for a town with a population of 150,000 inhabitants was completed while the total number of new settlers was less than 10,000. Educational, housing and health facilities were also under-utilized" (p. 130).[50] Other town and village projects also failed in the Egyptian new town experiment: the 15th of May City lacked basic infrastructure; in Sadat City only "19 out of a total of 158 newly planned industries were initiated. From a total of 12,200 planned units, only 1,000 housing units were constructed" (p. 131). The town of El-Obour suffered a similar fate.

As we will see in Chapter 7, following natural disasters, attempts to relocate vulnerable communities to villages and "new towns" in Tunisia, Indonesia, India, Sri Lanka and Honduras have turned into disasters themselves, in some ways more terrifying than the original events that precipitated the relocation.

Despite recurring nostalgia for rural life, specialists now agree that urbanization is "an inevitable outcome of the development process" (p. 5).[51] In most developing countries, urbanization is a major factor underlying prosperity. UN-Habitat makes this clear in unmistakable terms: "Empirical evidence clearly demonstrates that as a country becomes more urban, its per capita income also tends to rise." It continues:

> The level of urbanization (or the proportion of people living in urban areas) is associated in some places with numerous positive societal outcomes, such as technological innovation, various forms of creativity, economic progress, higher standards of living, enhanced democratic accountability and women's empowerment.
>
> (p. 7)[52]

Recent evidence also suggests, however, that there is a limit to urban efficiency in developing countries, at least in Latin America's large metropolitan areas. Medium-sized cities seem to be more productive than large urban centres. According to a recent study published in *The Economist*, medium-size cities (such as Curitiba in Brazil, Toluca and Merida in Mexico, or Medellín in Colombia) perform better economically than large cities and capitals (Rio de Janeiro, Mexico City, Bogotá, etc.). The report argues that "unusually early in their development, Latin America's biggest cities may have ceased to reap economies of scale because their institutional, social and environmental support structures have not kept up with their expanding populations".[53] If the UN-Habitat argument and *The Economist*'s report can provide a guide to policy-making—at least in Latin America—it can be argued that significant positive effects can be obtained from increased urbanization, while avoiding unplanned "megalopolization."

Whereas several scientists still deny that there is a causal relationship between urbanization and reduced poverty, the 2010–11 UN-Habitat report suggests the opposite: "Urban growth is, therefore, both positive and necessary for rural poverty reduction" (p. 25). In any case, investment in urban housing is sound policy. This does not mean, however, that investment in villages and small towns is not also needed. Several UN-Habitat publications advocate for intelligent investment in what it terms "small urban centres." Nonetheless, it has become clear that the reasons for investing must be carefully considered. One of these reports concludes that government investment in small urban centres, as a measure to control the growth of large cities, has had a very poor success record.[54]

Enabling Markets and Providing Subsidies

Discouragement with publicly controlled housing solutions lead to a hopeful turning to (private) market-driven solutions in many developing countries. This represented a shift from project-based solutions, such as public housing, slum upgrading and village development, to solutions based on structural reforms. In the late 1980s and early 1990s, specialists recognized that housing and land markets in developing countries suffered from numerous bottlenecks and over-regulation, largely due to bureaucratic, administrative and legal frameworks.[55] Both international financial institutions and United Nations agencies claimed that the housing agenda should not be based in public projects, but rather in the creation of an appropriate administrative, economic, legal and institutional environment to enable the private housing sector to work efficiently (Chapter 3 will comment on this approach).

By 1993, this strategy was adopted as policy, and the World Bank and the United States Agency for International Development (USAID) were explicitly encouraging the privatization of housing production. In so doing, this approach became the

"third generation" of international policy on low-income housing. Not only were governments expected to limit their participation in housing production, but they were also expected to reduce unnecessary involvement in its regulation. By this time, it was largely recognized that housing development provided an important contribution to overall development. With less government involvement, employment and other macro-economic indicators would improve. Generally, the policy recommended:

- developing property rights;
- developing mortgage and financing, including lending and borrowing at affordable interest rates;
- opening up urban land for residential development through provision of infrastructure;
- reforming building and planning regulations concerning land and housing development;
- expanding market activity;
- revitalizing the construction sector by eliminating regulatory barriers;
- developing an institutional framework to enable markets.[56]

Additionally, the approach often included providing subsidies to poor families to enable them to purchase housing units developed by the private sector. Direct subsidies were a marked improvement compared to the approaches implemented during the 1970s and 1980s. However, despite widespread enthusiasm for limiting State intervention and increasing private sector participation in housing provision, the approach of enabling the markets and providing housing subsidies has also proven to be disappointing in both quantitative and qualitative terms. It is now argued that "enabling the markets to work" has not equalled "giving the poor access to better housing."[57]

In fact, the number of squatter settlement residents worldwide increased from 715 million in 1991 to 998 million in 2005, and this number is expected to increase to 1.4 billion by 2020. The challenges remain enormous. An investment of US$3 trillion would be required to overcome the housing and public infrastructure needs of Latin America alone.[58] It is estimated that Bogotá—the city that attracted the Sanchez family in the story at the beginning of this chapter—will need to double its present housing stock by 2025.[59]

Chapter 3 discusses the reasons for the limited success of this strategy. Here, I will touch on just a few. First, structural reforms were not implemented at the pace or on the scale that the World Bank and the International Monetary Fund (IMF) policies anticipated.[60] Secondly, the strategy failed to sufficiently stimulate action and participation from community-based organizations. Third, by concentrating poor residents in specific neighbourhoods built by private developers, most projects undertaken in this approach have exacerbated social segregation. Fourth, the solutions have rarely reached the poorest sectors of society. Finally, and more worryingly, most housing projects have failed to adapt to the needs and aspirations of low-income residents (see Figure 1.12).

Chapters 3 and 7 will argue that the neoliberal policies promoted by the World Bank and the IMF pushed governments to reduce their involvement in housing, thus effectively transferring responsibility for housing planning, financing and procurement to municipalities. This policy was widely implemented in Latin America and in other parts

FIGURE 1.12   "We are making your dreams come true" is the motto of this housing developer, who sells units to subsidized families benefitting from a Colombian government "enabling" program. However, many dreams of the poorest Colombians have failed to come true under this policy.

of the world in the 1980s. Rusen Keles asserts that in the reorganization of the Turkish government conducted in 1984, "rights, powers, duties and functions of the Ministry of Public Works and Settlements in respect to squatter settlements have been transferred to the municipalities" (p. 164).[61] However, small- and medium-size municipalities were given neither the financial mechanisms to intervene nor the administrative and legal structure to effectively respond to this challenge.[62] Most municipalities found themselves incapable of initiating and managing housing programs, and powerless to respond to housing crises and disasters.[63] As we shall discover in Chapter 7, in many cities of the developing world the result has been catastrophic. It is now accepted that "the main single cause of increases in poverty and inequality during the 1980s and 1990s was the retreat of the state" (p. 43).[64] The UN-Habitat Global Report of Human Settlements 2003 asserted that "the redirection of income through progressive taxation and social safety nets came to be severely threatened by the ascendancy of neo-liberal economic doctrines that explicitly "demanded" an increase in inequality" (p. 43).[65]

The NGO Revolution: Providing Housing Through International Development

Few housing projects have attracted as many young architects, urban specialists and design professionals as those falling under non-governmental organization (NGO) based international development. In fact, in an effort to compensate for the inability of both the public and private sectors to solve the housing problem, over the past few decades, the not-for-profit sector has assumed a significant role in housing provision in developing countries. Aid (also known as "Official Development Assistance") has

FIGURE 1.13   Badly hit by Hurricane Mitch in November 1998, a few months later the town of Choluteca, Honduras, became the site of an "NGO storm." At least 16 international NGOs (many of them religiously oriented) worked in the region for three years building this new development, a few kilometres away from the original town.

become an enormous industry. It is estimated that between 2001 and 2005, developing countries received US$368 billion in aid, 129 billion of which went to African countries alone.[66]

However, aid to developing countries has rarely been completely "free." Donor nations use international aid as a foreign policy instrument to promote strategic agendas and to implement international policy. For instance, about two-thirds of the UK's aid has gone to countries belonging to the Commonwealth, with whom it wishes to maintain close relationships. International aid specialists argue that "there was an increase in condition-based lending in the 1980s, based primarily on institutional reform and economic policies with strong neoliberal principles of market-led development in developing countries" (p. 86).[67] These economic conditions (typically known as "the Washington Consensus") required developing countries to embrace Structural Adjustment Programs (SAPs) designed by international agencies. Since then, multilateral aid through agencies such as the World Bank, United Nations and the European Union has assumed an important role in the formulation and implementation of development policy.

Two types of aid exist,[68] development aid and humanitarian aid, both of which have had a strong influence on housing provision (see Figure 1.13). In both cases, aid has largely been administered by bilateral and multilateral funding agencies acting through NGOs, principally those that consider housing to be a fundamental component of development (not all do). Sometimes, government agencies in developed countries also act through international NGOs operating in partnership with local NGOs.

Paradoxically, the aid industry has recently tried to mitigate the negative effects of structural adjustments (such as liberalization, privatization and reduction of welfare)

that were widely promoted during the 1980s. According to a recent paper published in the *International Encyclopaedia of Human Geography*, NGO involvement "in implementing World Bank-financed projects grew rapidly during the 1980s and 1990s as many governments' service-delivery capacities were shrinking."[69] The paper adds that "70% of World Bank-financed projects in 2006 had NGO involvement" (p. 85).[70] Today, it is estimated that about 30% of development aid is managed by multilateral donors such as the World Bank,[71] which, for a long time, required that governments involve NGOs and advocacy groups in the preparation of Poverty Reduction Strategy Papers.

Despite good intentions, NGO involvement in providing housing in developing countries has had largely disappointing results. They are not, of course, a homogeneous group. NGOs act in different ways and produce different results.[72] Yet, generally, the majority resort to the same "package" of objectives, including good governance, community empowerment, sustainable development, equity and the strengthening of civil society. Their methods are also often the same, including community participation, partnerships with local institutions and communities, objective-based management and strong community leadership. The following chapters will show, however, that in most cases the descriptions of objectives and the means of achieving them are merely rhetoric. Overall objectives have not been effectively implemented, and noble intentions have remained just that. Community participation typically means that users provide cheap sweat equity; community-level interventions sometimes exacerbate urban fragmentation and segregation; equity often means an equal distribution of goods (irrespective of obvious differences between beneficiaries); and objective-based management becomes a linear task prescription that adapts poorly to dynamic contexts. Other common problems with aid-based interventions are that:

1   NGOs act according to their own agendas and priorities, thereby effectively bypassing the State and creating a parallel system of individual, isolated interventions, rather than acting in support of holistic, long-term strategic plans.
2   External NGOs, which often intervene for short periods of time, regularly abandon beneficiaries and communities once the project funding is exhausted. This short-term intervention strategy rarely results in sustainable long-term solutions.
3   NGOs have adopted many enabling/subsidizing strategy methods, notably the tendency to locate new developments in remote areas, avoid the informal sector and hire large formally-based contractors.
4   The work of NGOs is often fragmented. Although in some cases various organizations will offer a variety of services and products to a group of beneficiaries, in other cases their products and services overlap. The first scenario often creates piecemeal and fragmented solutions, while the second results in redundancy and competition (NGOs often compete for beneficiaries). Both problems have a negative impact on the well-being of beneficiaries and the quality of human settlements.
5   International NGOs and consultants have, all too often, become the real beneficiaries of development aid.[73] Not only are NGOs now staffed by large numbers of well-paid "experts," but they also issue generous contracts to numerous consultants who travel, analyse foreign contexts, propose guidelines and produce reports (which often serve little purpose beyond filling NGO directors' bookshelves).

6   The work of NGOs depends on external donor funding. Despite good intentions, however, the donors' priorities and agendas do not necessarily reflect the needs and desires of the poor.[74]

7   Typically, NGOs justify and legitimize their interventions by emphasizing the inaction, inexperience or negligence of other project stakeholders (particularly public agencies). It is hardly surprising, therefore, that they sometimes have very poor relationships with governments, local authorities and other project participants.[75] These difficult relationships often limit project performance. It has been noted, for instance, that in Mexico "the rivalry between the Mexican government and NGOs limits the possibility of NGOs to address livelihood issues of the Mexican poor" (p. 367).[76]

8   NGOs rarely hire experienced architects, urban planners and design professionals.[77] Instead, designs are often produced by junior professionals whose housing knowledge and experience of the local context is limited. The lack of skills typically undermines project quality and intervention performance.

9   Although they possess neither experience nor knowledge of complex housing and urban issues, hundreds of NGOs, whose experience lies in social development or emergency aid, will initiate permanent housing projects. This lack of knowledge of the social, aesthetic, functional, technical and managerial aspects of housing projects greatly reduces the quality of initiatives, and undermines the sustainability of new settlements.

Implications for Rethinking and Designing Low-Cost Housing in Developing Countries

As we have seen, previous approaches have failed to substantially alleviate qualitative and quantitative housing deficits or improve the living conditions of the poor. Meanwhile, the population of slum dwellers worldwide continues to grow by about 10% yearly.[78] The following chapters will elaborate additional limitations of the approaches previously mentioned. Examples given will illustrate the weaknesses of these strategies as implemented by the public, private and non-profit sectors. We will consider how recently-popularized approaches—the enabling strategy, NGO interventions and current policies—seek to reinforce particular supply-side components, namely formal (private) sector products, services and markets.[79]

The book will construct an argument and a framework for thinking about low-cost housing that focuses on its role in social justice. I will argue, for instance, that although it has successfully created housing solutions for about half of the world's population, adapted to hostile environments and provided innovative and affordable solutions to the poorest of the poor, the informal sector has been largely ignored and excluded. The title of this book derives from this fundamental premise. Worldwide, the informal sector produces millions of innovative, highly adaptable and culturally sensitive housing solutions. These are insufficiently understood by architects, urban planners, design professionals, politicians and other decision-makers, and I have therefore chosen to refer to them as "invisible houses." Informal settlements (the informal sector's most notable outputs) constitute sophisticated social, economic, technological and political systems, yet they go unseen by most professionals, who view them instead as demeaning

FIGURE 1.14 The processes of housing development have become invisible to the majority of non-poor. Busy pedestrians in Mumbai seem to fail to notice the survival strategies happening in the background.

and chaotic (see Figure 1.14). This book will show that, contrary to common belief, slums are not demeaning and chaotic environments where anarchy and disorder prevail and from which residents long to escape. We will highlight the structures and reasons that help determine the economic and social relevance, morphology and functioning of urban slums and other forms of informal settlements.

The book's title also alludes to the fact that the informal sector is so ignored and neglected that it has become an invisible component of both the urban economy and the urbanization process. Its products, achievements, problems and solutions remain unseen by most design professionals and decision-makers. By focusing on the actions that architects, urban planners and design professionals can take when planning and designing housing projects, the book will underline how the informal sector presents opportunities and challenges for both the housing problem and social development.

We shall also see that it is not just the informal sector that is invisible to design professionals and decision-makers. The importance of the housing development process is so commonly underestimated that it is often missing altogether. And yet, as will be shown, the quality of this process is crucial for the development of successful architectural and urban projects. The understanding gained through a careful study of invisible actors, products, processes and settlements is critical to developing sustainable housing solutions that can help redress social injustices.

The book is based on the belief that architects and urban specialists have a crucial role to play in housing and social justice. The challenges and opportunities ahead

for improvement are gigantic: a recent World Bank study estimates that the built-up urban areas of developing countries may triple by 2030, which would mean that these countries alone will see the development of "the same amount of built-up urban area in the next 24 years as the entire existing urban world has done up to this point in history" (CD-ROM).[80] This is an opportunity that cannot and should not be missed.

Complexity and a Systems Approach

Responding to this challenge requires that one assume a particular view of the housing problem. More specifically, it involves accepting and grappling with the innate complexity of redressing social injustices; various levels of intervention, variables and temporal frames must be considered simultaneously.

Multiple levels of intervention: Professionals and policy and decision-makers often act within confined mandates: politicians and bureaucrats make policies, urban planners create plans and architects design projects, which are typically organized and coordinated by project managers. This is understandable, given the need for specialization and focused expertise. However, the consequence is that policy-makers and planners rarely understand the constraints of housing projects, and design professionals often have a limited understanding of policy-making and housing policy ramifications. As we shall see in the following chapters, policies and plans repeatedly fail because they have not been tailored to specific project characteristics, and project performance is affected by poor policy and idealistic planning. In reality, finding solutions to housing deficits involves understanding housing development as a complex system in which different levels of intervention, including projects, programs and policies, have a strong influence.

Dynamic variables and trade-offs: Chapter 7 will discuss the phenomenon whereby architects, engineers and designers appear in the wake of major disasters that have attracted public attention, claiming to have a brand new "housing solution." These innovations are too often little more than technical solutions—perhaps a new gadget for building houses. They are rarely comprehensive solutions to the complex variables at play in housing development. While building houses is relatively easy, developing meaningful, liveable settlements that redress social injustices is a complex endeavour.

In fact, the construction of the units is rarely the difficult stage of addressing the housing problem. In most developing countries, houses are relatively easy to build with local resources and know-how. Let me repeat: the difficulty of housing provision is not the construction of structures, roofs and envelopes or the speed of construction or the even the efficiency of the construction site. The real challenge is properly coordinating multiple variables. These variables include land acquisition and transfer, project management, organizational design, project governance, stakeholder participation and management, development of financial mechanisms, solving legal challenges and procedures, considering heritage conservation, infrastructure development, community service establishment and economic activity development. All these variables affect one another: governance mechanisms determine stakeholder satisfaction, infrastructure construction is a prerequisite for economic development, land management is indispensable to the success of housing plans, community services greatly influence settlement sustainability, and so on. Avoiding the (housing) system's complexity by focusing on any particular element, such as construction methods, materials or resources,

FIGURE 1.15 Complexity must be embraced in order to deal with the multiple variables, time scales and levels of intervention that must be considered in housing development—some of them portrayed in this view of Ahmedabad, India, where the challenges are enormous: transportation, heritage conservation, infrastructure, income-generation, pollution, etc.

is hardly a sound solution. Rather, architects, urban specialists and design professionals need to deal with the problem's complexity by integrating all these variables into the solutions they devise and managing the way they interact (see Figure 1.15).

Temporal frames and scales: Most housing solutions proposed by "experts" (including those proposed by public agencies and NGOs—which often work with short-term mandates) typically focus on the delivery of housing units; that is, the short-term processes occurring immediately before they are occupied. However, developing sustainable settlements is a process that can take several years, or even decades. This book will demonstrate that successful housing solutions are those that incorporate short-term actions, mid-term results and long-term impacts, and include planning and following-up post-occupancy phases.

Most professionals know that housing design requires the consideration of interventions on various scales—from the unit to the overall urban level—that determine the relationship between settlements and neighbourhoods (some even argue that the regional scale must be carefully considered). The relationships between the outputs at these different levels are, nonetheless, seldom understood or analysed when planning housing interventions. As we shall see in the following chapters, the relationships between the housing unit and the plot are habitually neglected, and this causes severe limitations to incremental construction. The relationship between plot size and family income are usually ignored in housing projects, which often propose identical plot sizes. The relationships between neighbourhood development and urban

integration are sometimes underestimated by NGOs concentrating on responding to the needs of a particular community. In sum, the relationships between units, plots, clusters, neighbourhoods, settlements and cities need to be carefully considered to provide comprehensive solutions to the housing problem.

Gathering and Using Information

Making decisions about housing often involves accepting significant trade-offs. Consider density: there is no doubt that community involvement in decision-making increases end-user satisfaction (in Chapter 9 we will review the evidence for this). Users and communities usually demand or expect lower-density settlements. There is usually a preference for detached units, large open spaces and parks, lower buildings rather than tall ones and generous front yards. Urban planners know very well, however, that lower density has a negative effect on public infrastructure sustainability, transportation and economic activities. Both variables (user satisfaction and long-term sustainability) are certainly desirable, but achieving both simultaneously is not always easy. Consequently, experts in project collaboration have found that users often need information and training sessions to understand how their desires and expectations affect the project. Only this way can they significantly contribute to the decision-making process without feeling frustrated when they fail to see their hopes and expectations reflected in designs and plans. As we shall see in the following chapters, failure to provide these training and information opportunities leads to an imbalance of variables that ultimately reduces user satisfaction and long-term sustainability.

In some aspects, housing interventions are more difficult than other architectural projects. In housing projects and programs, it is especially difficult for decision-makers to collect sufficient information about users to respond to their individual needs and expectations. Not only would a large amount of data about each individual family need to be collected (every user is different), but this data is dynamic, meaning that it is constantly changing as living conditions evolve. Factoring in all the information needed for each stage of the project (land acquisition and transfer, project management, organizational design, project governance, stakeholder information, financial mechanisms, legal challenges and procedures, infrastructure needs, expectations about community services, factors influencing economic activities, etc.) is virtually impossible. As we have seen, even if all the information were available in real time (promptly updated as it changes), using it in decision-making would remain difficult because some variables negatively affect others. So, how can housing projects be properly designed when all the information required to respond to users' individual needs and expectations is not available?

This book argues that common housing strategies concentrate decision-making power and thus exacerbate the information problem described above. As such, it is particularly necessary to decentralize decision-making power in housing projects and initiatives. This decentralization enables both individual and collective agency to be considered. The following chapter describes how informal solutions capture a vast amount of dynamic information required to develop convenient housing solutions. Architects, urban planners and design professionals need to learn *about* and *from* this sector. When it comes to low-cost housing we all need to learn from the poor.

Subsequent Chapters

Throughout this book, a series of case studies in Colombia, Honduras, El Salvador, Cuba, India, Haiti, Iran, Tunisia, South Africa and other countries illustrate the book's central argument. I conducted most of these case studies with colleagues and the help of students affiliated with the IF Research Group (under my direction). Chapter 2 explains how informal settlements and the informal sector function. It clarifies the identity of the urban poor and informal workers by addressing the question of whether they are criminals, wrongdoers, victims or heroes. It also defines the boundaries of informality and attempts to categorize informal activities. Finally, it describes the limitations of informality. Chapter 3 explains how the housing market functions, describing its distortions and the so-called "gap" in the housing ladder. It also analyses the major financial mechanisms operating in the residential market. Chapter 4 deals with the problem of land, concentrating on the issues of land tenure, density, land management, corruption and land-use vulnerabilities. Chapter 5 focuses on the argument presented in the first chapter, exploring the concept and operational mechanisms of the informal sector's most common housing development strategy—incremental construction. Chapter 6 claims that housing is not really about houses, but rather about infrastructure, community services and economic activities. In explaining this, it focuses on public services (water, sewage, electricity, telephone, Internet, etc.), collective services and transportation. The issues of vulnerability, resilience and reconstruction will be explained in Chapter 7, which argues that disasters are not actually "natural" and that, when not properly handled, reconstruction projects themselves are often another disaster.

Chapters 8 through 10 introduce a theoretical framework for addressing low-cost housing in developing countries, focusing on social justice. Drawing from human rights theories, Chapter 8 explains the role and strength of individual agency and the freedom to make decisions, while also discussing the limitations of a freedom-based approach to housing. In response to these limitations, Chapter 9 explores stakeholder theory to build a case for sound governance mechanisms in housing interventions. Chapter 9 presents an innovative framework that creates strong links between individual and collective agency, which helps establish housing as a matter of social justice. Chapter 10 examines the strength and viability of this approach in situations of extreme inequality, and the advantages of a sustained commitment to core values. We look at a demanding approach to planning, design and research and policy-making that calls for the sustained engagement of multiple stakeholders. This chapter returns to the argument of complexity and clarifies the scope for architects, urban planners and other professionals and decision-makers. It also discusses the design challenge we face and which, to paraphrase Italo Calvino's description of Zenobia, must ultimately create the conditions in which people can live lives they have reason to value. But which people? Let's first consider who the invisible millions are.

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2

INVISIBLE MILLIONS

The Multiple (and Contradictory) Faces of Poverty and Informality

> They also believe, these inhabitants, that another Beersheba exists underground, the receptacle of everything base and unworthy that happens to them, and it is their constant care to erase from the visible Beersheba every tie or resemblance to the lower twin.
>
> *Invisible Cities*, Italo Calvino (p. 100)

The Perfect Columns

Hernando Murielo was, in many aspects, an informal construction worker like any other. He was often hired on a daily basis to contribute to construction fieldwork in different places of El Valle, a region in western Colombia. Unlike many other temporary workers, however, he saved enough money to buy basic construction tools. This allowed him to conduct work directly, without the need to be hired by a general contractor. With time and discipline, his equipment improved and he started to build as a general (informal) contractor in places like Santa Helena, near the city of Cali, where he ultimately set up a workshop and established his business. He later developed a piece of equipment that was to change his fate and the future of his family. He found that casting columns with the timber and metal supports used in traditional concrete forms was both expensive and time consuming. By recycling large PVC pipes, he conceived a concrete form that needed not be lost in every use, allowing him to build as many as ten columns (see Figure 2.1.). Not only were the columns cast faster and more efficiently (without losing the form in every use), but also they had fewer defects and errors in dimensions.

Reputation about Hernando's technique and good quality of work granted him enough informal contracts to afford sending his son to study in a university in Cali, where he ultimately graduated in architecture. When I visited Hernando in 2012, he had partnered with his son, who now had obtained the right to practice architecture. Their business was then a "formal," duly registered enterprise that paid income tax, collected and paid sales tax and complied with most employment regulations. The

FIGURE 2.1 Mr Murielo's equipment to cast round columns allowed him to obtain profitable contracts. By recycling PVC pipes, his concrete forms can be easily handled and used as many as ten times (top picture). The result is perfectly cast columns that reduce costs and time in construction (bottom picture).

company now has a Facebook page that promotes their activities and features pictures of their best projects.

It took twenty years in the path from informality to formality to transform the Murielos' business. Is this a successful, uplifting story that represents the entrepreneurship of millions of informal residents and workers or, instead, one that masks (and distracts us from) a very different reality? This is a charged question, but one that must be answered in order to develop appropriate interventions in low-cost housing in developing countries.

Multiple Representations and Perceptions

A cornerstone of any change in housing conditions for the poor is to know *who we are working with*. Note that by "we," I refer to, among others, architects, design professionals and decision-makers, and that I prefer the expression "working with" rather than "designing for" or "planning for" when I refer to both users and builders. I will further describe the implications of this particular phrasing in Chapters 8 and 9. Nevertheless, as we shall see in this chapter, defining *who we are working with* is not an easy task, particularly because divergent views of the poor often compete—and coexist—in both literature and policy.

This tension is especially relevant considering that varied representations and perceptions of the poor have contributed to justify and legitimize urban housing interventions. Housing specialists Graham Tipple and Suzanne Speak have shown, for instance, that homeless people are wrongly portrayed and perceived as "villains," "beggars," "mentally ill," "immoral," "transients," "loners" and "helpless." Tipple and Speak argue that these largely false perceptions of homeless people, and the representations that people and institutions create of them (usually accompanied by judgmental and pejorative language), have contributed to institutionalize their stigmatization and segregation.[1] Rightly disturbed by the size of the homeless population in developing countries, they refer to the homeless as "the hidden millions" in an excellent book with the same title.

Consider also the case of planning and design of rental space for the poor. Rental solutions are some of the most ignored aspects of housing development in the Global South. Many reasons explain this flaw in policy, including misconceptions about landlords, who are often portrayed as ruthless exploiters of poor tenants. Alan Gilbert, a professor at University College London, has shown, however, that landlords in many Latin American cities are instead owner-occupiers that have one or two properties. "In certain Colombian cities," he finds, "absentee landlords rarely own more than two or three properties." He continues:

> Not infrequently, the principal form of accommodation is provided in consolidating self-help settlements where resident owners rent out individual rooms. Petty landlordism seems to be the rule and is part of the process by which more established owners try to increase their incomes.
>
> (p. 133)[2]

He also found this pattern in Guadalajara and Puebla (Mexico), where he revealed that the majority of landlords were rather poor and built their houses through self-help.[3]

Given these misconceptions, who actually are the residents of informal settlements, the urban poor and the informal workers? Before we explore the world of informal entrepreneurs such as Mr Murielo, let's consider the multiple representations that are generally created of slum dwellers and the urban poor.

Slum Dwellers and the Urban Poor: Criminals, Wrongdoers, Victims or Heroes

Criminals

The perception that slums are home to dangerous criminals has provoked and justified the most hideous reactions towards informal settlements. Millions of Brazilians have been forcibly evicted and are still persecuted in favelas in Rio de Janeiro and other cities accused of collaborating with guerrillas and drug dealers.[4] Linking slum dwellers with subversion also justified brutal persecution in Egypt, Chile, Argentina and Algeria during the 1970s.[5] Similarly, recent slum demolitions and evictions in Zambia, Malaysia, Bangladesh, China and Zimbabwe have been justified with arguments that link slum dwellers to criminal activities.[6] Probably the most famous segregation, persecution and repression of the urban poor occurred in South Africa during the Apartheid regime, with dramatic consequences that still remain two decades after the end of the regime (see Figure 2.2). Housing expert Marie Huchzermeyer argues, nonetheless, that policy-makers in South Africa still define the problem of informality "with a focus on the illegality of the settlement process, of the land use and the building type" (p. 334).[7]

Alas, various indicators suggest relationships between informal settlements and both urban crime and violence. According to a UN-Habitat report, the number of homicides in certain slums can be more than five times higher than in other districts.[8] Another

FIGURE 2.2   The criminalization of informal settlements has led to increased segregation, exclusion and persecution. In few places these are as noticeable as in urban South Africa.

report by UN-Habitat highlights, for instance, that much of the crime in Nairobi, Kenya, originates from informal settlements, where 60% of the population lives in just 5% of the city's land.[9] Some physical characteristics of slums seem to contribute to higher rates of crime, including poor lighting, limited transit of people in some areas, lack of surveillance, increased densities, etc. Other studies claim, however, that these characteristics have less influence than cultural and social ones. "Cultural and social expectations of violence, coupled with young male "hyper masculinity" values," argues the UN-Habitat report, "pervade many Brazilian favelas, Colombian barrios, Jamaican slums and North American ghettos—where marginalized young men are expected to revenge insults with injury or death" (p. 67).[10] The concurrence of informal settlements and gangs seems also to explain several crimes in South Africa. It is estimated that there are as many as 100,000 gang members in the Cape Flats in South Africa, who are considered responsible for 70% of crime in the region.

Wrongdoers

Slum dwellers are usually accused of negatively affecting other citizens, cities and the environment. Gangsters and other inhabitants of informal settlements commit crimes that affect non-slum-dwellers. Besides, it is often believed that slums and other informal constructions deteriorate the image of cities. This perception has justified major interventions aimed at "beautifying" key urban areas. In too many cases, though, this approach has taken the form of forced and market evictions that reinforce social injustices. Unlike forced removals, market evictions are caused by more subtle developmental pressures such as urban gentrification, rental increases, land-titling programs, land development and land grabbing. These evictions are often triggered by infrastructure projects (in the last five decades, 50 million people have been evicted in India for the construction of dams), by international mega events (it is estimated that 1.7 million people were evicted in Beijing ahead of the 2008 Olympic games)[11] and by other "urban beautification" initiatives.

In Chapter 7, we shall see that the informal construction sector has been unfairly accused of causing major natural disasters, exacerbating the perception of informality as a dangerous phenomenon. An additional common complaint is that slums and other forms of informal settlements cause important environmental damage, including contamination of water sources, air pollution and deforestation. Pollution of water sources is caused, among others, by open sewers, their use as public toilets or places to wash clothes and by the accumulation of waste. In fact, pollution of water channels is considered today one of the most important environmental challenges in Port-au-Prince, Haiti (see Figures 2.3 and 2.4). For some (even local) observers, this is the inevitable result of the inherent laziness and dirtiness of informal residents.

Air pollution is often caused by the burning of waste, the use of charcoal and wood for cooking and energy generation, and the lack of maintenance in equipment. Deforestation is often linked to illegal occupation of green, agricultural or environmentally protected areas. Beach-flanked mountains (a scenic attribute of Rio de Janeiro, Brazil) are, for instance, considered increasingly threatened by the expansion of favelas, prompting authorities to erect concrete walls to restrain the "spill" of informal construction (see Figure 2.5).

FIGURE 2.3 This open-air market in Port-au-Prince, Haiti, is, in reality, a highly polluted water spring and an urban gully where residential and commercial uses collide.

FIGURE 2.4 Polluted water sources are a threat to both the environment and public health in Cité Lajoie in Port-au-Prince.

FIGURE 2.5 In an attempt to control the expansion of Favela Santa Marta (Rio de Janeiro, Brazil, top picture) and protect green areas, authorities recently built a protective wall (bottom picture), a public measure that has been rightly accused of being exaggerated, inefficient and humiliating.

Victims

Informality in economy and construction has a price too; part of the tag is paid by slum dwellers themselves. The poor are often victims of unreliable public service providers, violence, inadequate transport infrastructure, natural hazards, pollution, marginalization, forced evictions and other social ills. Studies have shown that rates of urban violent crime across neighbourhoods "vary considerably, with higher rates correlated with lower incomes" (p. 12).[12] Child abuse, for instance, is frequently associated with perceived "high densities" in some South African settlements.[13] Even though crime is one of the most important worries of the urban poor, they also fall victim to other subtle abuses linked to informality. Perlman's research results on Brazilian favelas show that *favelados* (residents of Brazilian favelas) often pay proportionally more for public services than people with sufficient means. She explains that they live in a "controlled monopolistic territory," and are typically obliged to purchase from a sole source at a premium rate (p. 184).[14] These findings echo the observations of Edward Luce, a journalist and specialist in Indian affairs. Luce finds that, in order to obtain water, the Indian poor often have to pay private truckers, who belong to a "water mafia" (p. 213).[15] Finally, informal dwellers also suffer from poor political representation and public voice, which together limit their possibilities to act as agents in their own development. Given these social injustices, several experts now agree that informality is more a manifestation of the informal dwellers' infringement of rights than of their contravention of law.

Heroes

The urban poor are sometimes portrayed as heroic survivors of a ruthless economic and political system. This approach has justly led to creating a more positive view of informal dwellers and low-income urbanities. A recent report published by the World Bank illustrates this view: "Residents in [slums and informal] communities contribute substantially to the broader economy, through the provision of services, industrial production and construction. They are usually hard working, entrepreneurial, resourceful and self-reliant" (DVD).[16]

Following this line of thought, recent studies have shown that the urban poor develop significant resilience strategies to adapt to the environment (I will return to this argument in Chapter 7). These strategies eventually allow *favelados* in Rio de Janeiro, for instance, to exit slums and move to formal residential areas within one generation.[17] A more positive view of the poor has prompted the emergence of studies of their own social capital, their mechanisms of adaptation and their capabilities (concepts that we will explore in Chapter 8). Let's consider now other perceptions of informality in economic production.

Informal Businesses and Workers: From Supporting Them to Keeping Them at Bay

There are a significant number of business owners among the urban poor. This has led many experts to believe that—despite the paradox—there is an enormous economic potential *in poverty*. Perceptions about the informal sector and economy are, nonetheless, typically based on anecdotal evidence or econometric data that do not

distinguish between different forms of informality. Thus optimistic and suspicious views of informal businesses and workers often compete for prominence in academic publications and policy. Almost every expert or decision-maker can point to examples of workers that were mistreated or exploited in hostile labour conditions, or successful single mothers who built up a thriving company from almost nothing. Are informal entrepreneurs and workers resourceful drivers of change, illegal opportunists, or victims? What characterizes the people that offer barbequed *cabrit* (Haitian goat) in the streets of Port-au-Prince, delicious *pupusas* (Salvadoran tortillas) in the plazas of San Salvador, hot *phở* (Vietnamese soup) in the crammed alleys of Hanoi, cell phones, plastic combs, Chinese toys, acetaminophen pills, massages, tarot reading, photocopies, haircuts, beer and other products and services in almost every city of the developing world?

These are crucial questions for architects, design professionals and decision-makers interested in improving low-cost housing conditions in developing countries. Let's consider why. First, several informal economic activities occur in informal settlements. Second, income-generation activities conducted in the informal sector are sometimes linked to domestic activities. Production and domestic uses merge in the same space or are in great proximity, influencing and feeding each other. Finally, informal productive activities sometimes occur in public space and collective areas, greatly defining the configuration, functioning and character of human settlements. Given this importance, we should now consider different emphases in the representations that are often made of informal businesses and workers.

Resourceful Productive Agents

Many specialists see a significant source of employment and production in informal businesses in developing countries. For them, these businesses provide an opportunity for unskilled labour to participate in production and service provision. Informal enterprises fulfil an important social role, particularly because they allow women to work without fixed working hours and to produce income from home-based activities, which allow them to take care of children or elderly family members. A study conducted in the 1980s by W. Paul Strassmann, an expert in low-cost housing and home-based enterprises, seems to support this view. Strassmann found that the majority of workers believed that a home-based enterprise was better than working in a factory or other large organizations. For them, switching to a formal sector job would be justified only by a significantly higher income.[18]

These experts believe that business operators embrace informality as a result of overregulation and legislation (in taxes, labour conditions, business registration, etc.) that hinder their capacity to enter the regulated markets and sectors of the economy.[19] Running micro-businesses is, in this view, a natural response to the inefficacy of public sector service provision. This line of thought, often called the *legalist approach*, emphasizes a rather heroic view of informal entrepreneurs. For instance, Peruvian economist Hernando de Soto, a poverty expert, believes that "micro entrepreneurs will continue to produce informally so long as procedures are cumbersome and costly" (p. 4).[20] These specialists typically imply that informal businesses appear as a rational choice made by the poor when confronted with a hostile economic and legal environment (see Figure 2.6).

FIGURE 2.6 The informal sector largely comprises women who run their own micro-business, like this one, who offers hot meals in the streets of Port-au-Prince. Is she a convinced or reluctant entrepreneur?

The resourcefulness of informal entrepreneurs and workers provide, according to this approach, a relevant contribution to development—which can be enhanced by leaving the State out of the free market and eliminating bureaucratic procedures and fees that hinder legalizing business operations.

Motivation-related theorists also agree on a heroic perception of informal workers, but they emphasize different causes for the emergence of informal businesses. They argue that informal entrepreneurship emerges when an individual or group recognizes and exploits an opportunity.[21] Informal entrepreneurs, according to this approach, exploit opportunities that others have discarded, such as collecting and transforming trash or recycling materials.

Opportunistic Competitors

Sceptics note that legalists tend to "romanticize" informal entrepreneurs as "struggling against great odds to provide needed goods and services" (p. 505).[22] Assuming a different perspective, they observe that informal businesses and workers also exploit opportunities that regulations do not allow the formal sector to exploit easily (for example, exploiting natural resources such as wood or water). Like the legalist approach, this view recognizes

that the poor make a rational choice in the face of need. However, here observers emphasize the opportunistic approach of remaining in the informal sector. They argue that informal businesses and workers take advantage, in different ways, of the fact that the State and formal institutions often turn a blind eye to certain sectors of the economy and relinquish law enforcement. They notice, for instance, that informal traders escape penalties by selling only small quantities of goods that they can easily carry away and hide;[23] several businesses try to remain small and home-based in order to evade law enforcement; informal businesses skirt pollution regulations allowing them to operate outside institutional boundaries; and several informal activities do not respect labour condition standards in order to reduce production costs. Business specialist Justin Webb and his colleagues contend that informal entrepreneurs may find it more efficient to operate informally because the benefits provided by formality are lower than the costs required to obtain formal status.[24]

Perceiving an opportunistic attitude among informal vendors and artisans in Port-au-Prince, for instance, has contributed to a long history of forceful measures to evict them from public sidewalks and open areas. However, this strategy has repeatedly failed, and Haitians have grown used to seeing street merchants being violently chased only to see them reappear (in increasing numbers) a few weeks later in the same street or in a different part of the city.

Victims of the Economic System and Institutions

Other specialists emphasize that informal workers and businesses are victims of an economic system and an inefficient labour environment that forces the poor to accept lower standards of production and income-generation. What economists call "the dualist school of thought" subscribes to the notion that the informal sector comprises marginal activities "distinct from and not related to the formal sector" caused by the fact that "not enough modern job opportunities have been created" (p. 4).[25]

According to this perspective, informality is associated with the "uneven nature of capitalist development" that degrades labour conditions for the poor.[26] Defenders of this approach find that casual labour (simultaneously seen as a cause and a consequence of informality) impoverishes the most vulnerable sectors of society.[27] "Instead of upward mobility," writes Mike Davis, an opinion writer and activist, there is only a "down staircase by which redundant normal-sector workers and sacked public employees descend into the black economy" (p. 179).[28] Thus, informality is seen as a form of exploitation in which certain firms and decision-makers turn a blind eye to (or even subcontract and encourage) informal activities and labour to lower production costs. Left-wing defenders of this viewpoint argue that "informalization" is a mechanism to weaken the rights of workers and unions, disenfranchizing the working class with the acquiescence of the State.[29]

Informality in this sense comprises simultaneously of substandard labour (undeclared, exploitative), conditions of work (often hazardous and unprotected) and forms of management (unreliable, dishonest) that significantly affect the urban poor. Informal workers are thus considered "downgraded labour" resulting from poor or selective regulation and opportunistic behaviour by those who control the means of production. Observers point to a number of examples that illustrate this form of exploitation. They

find that women working in domestic cleaning, men distributing calling cards provided by telecom giants, and people distributing newspapers on the streets work under dangerous and unfair conditions that are not accepted in the formal economy.

Victims of Informality Itself

It is also argued that being neglected from formal economic, legal and political systems, the urban informal workers and entrepreneurs resort to informal services and institutions that exacerbate their vulnerabilities. One of these services is credit, where unreliable moneylenders and opportunistic traders are most often the financing institutions involved. Analysts point to common examples. If you live in a developed country, you probably pay between 15–18% annual interest rate on your credit card. This is roughly a 0.05% daily interest rate. Just imagine for a moment that you had to pay a 4.7% interest rate per day! As it turns out, this is the daily interest rate that informal fruit sellers pay in Chennai, India, to wholesalers, according to a study presented by poverty specialists Abhijit Banerjee and Esther Duflo in the book *Poor Economics*.[30] Banerjee and Duflo, as well as many other economists, explain that the poor pay high (sometimes absurd) costs for borrowing money. But this is not the only financial problem these informal entrepreneurs must face. Being neglected by the financial system—which rarely allows them to open a bank account—means that they also cannot protect their savings in financial products. Both problems significantly hinder their chances of growing their businesses to a profitable level.

There are many other services that informal business people have to pay at (proportionally) very high costs: these include security, water provision and transportation. In a recent study that my students and I conducted in the street markets of Port-au-Prince, we found that food sellers who display a small cart on the pavement pay almost the same amount of monthly "rent" (in this case to a mafia of informal street managers) that food sellers pay to the municipally run formal market. Informal businesses also spend considerable resources in order to avoid crime and abuse (see Figure 2.7). Furthermore, informal home-based enterprises, according to some experts, negatively affect family members. According to this view, informal family businesses overexploit employees, notably because family members work too hard for too little, and often work in unsafe conditions.[31]

Reluctant Entrepreneurs

The idea that the poor are natural entrepreneurs who enthusiastically embrace business ownership has been recently challenged by Banerjee and Duflo. The majority of the poor, they contend, resort to entrepreneurship out of lack of choices, notably, due to their inability to find a good job. The studies conducted in India by these renowned economists show that the small informal businesses of the poor are most often unprofitable. They find that the poor rarely have the capital, talent and skills to transform their small informal activities into successful businesses. These authors even challenge the idea that the poor have the enthusiasm and commitment required by a real entrepreneur. Citing the case of a female micro-entrepreneur who runs a shop but soon realizes that her business is not effectively profitable, they argue: "Given that her

FIGURE 2.7 Protection against crime is one of the most common priorities of informal entrepreneurs. This home-based workshop of clothing alterations in Yumbo, Colombia, is protected by steel grids against increasing drug-related violence and crime.

business is destined to remain small and never make much money, she may decide to devote her attention and her resources to other things" (p. 224).[32] These economists conclude that micro-credit, and other mechanisms to help informal businesses, play a role in the reduction of poverty, but they are hardly the magic solution that most micro-credit defenders typically claim.

Making Sense of These Different Viewpoints

In order to make sense of these different perspectives, it is necessary to distinguish between different forms of productive units, different types of employment, different forms of occupation of space and between informality and illegality. This is a rather technical discussion, but we shall see that it is important for providing clarity to the links between informal activities and housing.

Let's consider first the two types of informal productive units that exist: informal sector enterprises and productive households. The International Labour Office (ILO) considers that informal sector enterprises are private *unincorporated* enterprises owned by individuals or families and that produce goods or services for sale or barter. They are generally *unregistered,* small or micro-productive units. Households are not typically permanent enterprises, but they can become productive units when they produce goods for their own final use (for example for building the house) or when they employ paid domestic workers.

Let's examine now different forms of employment. The ILO does not embrace a strict dualistic approach. Instead, it recognizes that formal sector enterprises sometimes generate informal employment and that informal sector enterprises sometimes employ formal employees. Thus it considers informal employment as the total of informal jobs, whether carried out in formal sector enterprises, informal sector enterprises or households. It also recognizes that there are five different statuses in formal and informal employment: own-account workers, employers, employees, members of producers' cooperatives, and family workers that contribute in productive units (the latter is almost exclusively an informal job that does not include explicit, formal contracts).

By matching the different combinations that might occur between production units and statuses of employment, we find that there are nine categories of informal employment (note that not all combinations between types of production units and statuses in employment are possible):

1   employees holding informal jobs in formal sector enterprises
2   employees holding informal jobs in informal sector enterprises
3   employees holding informal jobs in households
4   family workers informally employed in formal sector enterprises
5   family workers informally employed in informal sector enterprises
6   own-account workers employed in their own informal sector enterprises
7   own-account workers engaged in the production of goods exclusively for own final use by their household
8   employers employed in their own informal sector enterprises
9   members of informal producers' cooperatives.

This analysis illustrates the blurred boundaries between the formal and the informal sectors. Even though, micro- and small-sized enterprises are more likely to engage in the informal sector,[33] numerous medium- and large-scale enterprises carry out a significant part of their activities informally (1 and 4 are types of informal employment that occur outside the informal sector).

Let's move now to the different needs and relations with space that may exist in informal productive units. Households and informal enterprises can be classified according to the type of outcome they generate, the type of production they carry out and their location. Table 2.1 presents a matrix of some of the combinations that may result from this analysis (impossible combinations are highlighted in grey). This taxonomy shows that both households and informal enterprises can generate products and services. However, the very nature of households (which aim at production for household own consumption) means that offering space for rent or sale can only apply to informal enterprises.

Informal enterprises can engage in product distribution (retail shops, for instance), while both informal enterprises and households can include transformation of products (for instance, recycling and transforming waste), production (construction, for instance) and services (cleaning, transportation, repairs, etc.). The type of production can be artisanal or industrial. The former often corresponds to low-tech and less sophisticated means of production almost completely based on crafting and manual skills, whereas

TABLE 2.1   Matrix combining two frequent informal production units and three forms of classifying informal income-generation activities. Impossible combinations are shaded in grey.

Category	Group	Subgroup	Households (Production for household own consumption)	Informal enterprises (Production for economic exchange)
Type of outcome	Products	Distribution		
		Transformation		
		Production		
	Services			
	Space	Rent		
		Sale		
Type of production	Artisanal			
	Industrial			
Location	Home-based			
	Private space			
	Public space	Sedentary		
		Semi-sedentary		
		Mobile		
		Itinerant		

the latter typically implies some machinery, lines of production and more sophisticated means of manufacturing.

Informal enterprises can also differ according to their location: within homes (a form that often combines domestic and production activities in indoor and/or outdoor spaces), in private spaces outside of the residential property (in buildings, rooms or open spaces not linked to the house and which imply transportation for the operators) or in public spaces. There are different types of activities that are conducted in public spaces such as streets, parks and plazas. Some of them are decidedly sedentary, notably when permanent fixed structures, such as booths, roofs, deposits or shacks are installed. Others become semi-sedentary, when temporary structures are installed in public spaces but they are not removed or transported on a daily basis (see Figure 2.8 for an example). Mobile activities are those conducted by merchants or service providers that have transportable carts, booths, tarps, equipment or furniture, and that change their location every day or that return the merchandise or equipment to their homes or storage spaces every day. Itinerant activities are conducted by merchants or service providers who are constantly moving and thus who carry the products, tools or equipment used for their activities with them all the time.

Of course additional combinations can be found when combining different categories and units of production. A semi-sedentary activity, for instance, can have artisanal production; a home-based activity can have industrial transformation, and so on.

FIGURE 2.8 Whereas some informal businesses are mobile, others become sedentary or semi-sedentary by using permanent or temporary structures installed in public spaces, like this semi-sedentary barber shop located in a sidewalk in Hanoi.

Finally, let's consider the difference between informality and illegality. Hussmanns and the ILO distinguish *illegal* from *underground* production. The former corresponds to a contravention of the *criminal* code and thus, to production activities, which are forbidden by law or which become illegal when carried out by unauthorized producers (for instance, selling illegal drugs). The latter often corresponds to a contravention of the *civil* code, notably in activities that are legal when performed in compliance with regulations, but which are deliberately concealed from public authorities (for instance, selling imported toys or hot meals in the street without tax declaration).[34] Given the previous taxonomies, let's consider now the implications of the different viewpoints presented earlier in this chapter.

Informal Activities and Value

The somehow sweeping arguments explained above are often affected by the tendency to confuse different types of informal income-generation activities. A careful look shows that several distinctions are necessary to avoid futile generalizations. Owning an unregistered taxi to deliver transportation services, owning a shop or renting space in a house in an urban slum are all examples of informal income-generation activities. Yet, all produce different value for the poor, and thus performance measures for each of these activities are probably different, and the expectations of their owners may significantly differ.

Banerjee and Duflo seriously doubt the idea that:

> … the average small business owner is a natural "entrepreneur," in the way we generally understand the term, meaning someone whose business has the potential to grow and who is able to take risks, work hard and keep trying to make it happen even in the face of multiple hardships.
>
> (p. 225)[35]

It is probably true that poor entrepreneurs disappoint the expectations of many economists concerning the performance of informal enterprises. But the argument of underperformance cannot be easily applied to all informal activities. Take, for instance, business growth, a performance criteria that—when applied to informal businesses—largely disappoints Banerjee and Duflo. One could argue that business growth is not equally important for all types of informal activities. In fact, a woman who works in cleaning activities (an own-account unit of production) and who occasionally hires one or two cousins to help with her activities is not necessarily interested in business growth; at least, not in the same manner that formal enterprises are.

Another common mistake is to believe that the only purpose of all informal businesses is to create profit (Banerjee and Duflo get particularly disappointed by the low overall return of the entrepreneurial activities of the poor). In fact, Webb and colleagues remind us "individuals pursue entrepreneurial activities to create value for themselves in other ways as well" (p. 606).[36] There is, for instance, a significant value that emerges from merging domestic and income-generation activities in household production units (home-based enterprises). Analysing about 2,000 cases of home-based enterprises in Lima (Peru), Kalutara and Colombo (Sri Lanka), W. Paul Strassmann found that a large percentage of operators argue that if they did not have the business in their dwelling (or site), the business would not exist, and without the home business, they could not afford to live in their settlement.[37] This means that home-based informal businesses offer "extended fungibility" (economist jargon for the capacity to exchange, combine and convert resources swiftly, conveniently and without loss). Thus, resources devoted to income-generation and to domestic activities can be shifted at a very low cost. Housing specialists Peter Kellett and Graham Tipple argue that many women and children are not "available for full-time employment, but can divide their time between household chores, education and home-based enterprises" (p. 205).[38] These experts have demonstrated that one of the principal resources that benefits from extended fungibility is space. There is nothing surprising in this finding. In fact, sharing, superposing and/or connecting domestic and income-generation activities is often simultaneously a traditional form of housing design and a strategy of adaptation in the informal sector (see Figure 2.9).

Enterprise life expectancy, another common indicator of performance that interests economists, can also be seen in different ways in different productive units. Banerjee and Duflo lament, for instance, that "in Indonesia, only two thirds of the businesses of the poor survived five years" (p. 213).[39] However, this lack of continuity doing the same activity is not seen in a negative light by all experts. Instead, some of them recognize that one of the main benefits of the informal sector is precisely its low entry and exit barriers,[40] which allow enterprises to adapt to fluctuating environments

FIGURE 2.9 Very often, the combination and proximity of domestic and income-generation activities constitute simultaneously a traditional form of housing in city centres in developing countries (like in this central district of Hanoi) and a strategy of adaptation of the informal sector.

and allow business owners to adapt to insufficiently available and dynamic information.

Architects, planners, design professionals and decision-makers are responsible for recognizing the monetary and non-monetary value of informal activities. By recognizing the intangible, individual and collective value of these activities, projects can better respond to households' needs and aspirations.

Informal Activities and Needs

Informal productive units usually combine different strategies of income-generation. It is not surprising to find a retail shop that offers clothing repair services, sells lottery tickets and provides a laundry service. However, different relationships with the space also mean different needs for business development and residential use. For instance, people who work away from their residences require specific facilities or spaces at home to store equipment and tools used in income-generation activities (see Figure 2.10). Edmundo Werna notes, for instance, that rickshaw pullers in India suffer from the lack of such facilities or spaces. He explains that a significant number of pullers "sleep in their rickshaws in order to prevent them from being stolen, because they do not have a safe place to leave the vehicles at night" (p. 222).[41] Architects, planners, design

FIGURE 2.10 Different informal activities have different needs inside and outside the house. Mobile vendors like the one photographed in first plan here (in Ahmedabad, India) typically need space to safely store equipment, tools and merchandise.

professionals and decision-makers must be able to recognize when families operate as production units; they need to identify the families' needs and those of informal enterprises, and to recognize the close relationships that might exist between domestic and income-generation activities.

When Informality is Not Necessarily Pretty

The boundaries between informality, transgression and crime are sometimes blurry. For instance, building a house on the green mountains of Rio (destroying an important environmental capital for the society) contravenes several laws and regulations. However, building concrete walls to prevent this sort of development is probably both inefficient and humiliating for *favelados*. More sensible solutions to these and other transgressions are required; notably through approaches that recognize that informality is, in itself, the consequence of rights infringements.

It is crucial to recognize the situations and the conditions in which informality becomes an adaptation strategy that allows the poor to produce value for themselves. Nevertheless, it is also necessary to be able to identify the situations and the conditions in which certain forms of informality hinder their own development. Water mafias, unreliable monopolies of public service provision, underground "security" services that resort to violence and intimidation, opportunistic dons who rent and

control open space, and other forms of coercion and exploitation often reduce the capacity of individuals, families and groups to achieve their own objectives and aspirations. Professionals and decision-makers need to distinguish between these different forms of informality in order to enhance the ones that genuinely create benefits and avoid—and seek to replace—the ones that produce or reproduce social injustices. This cannot be easily done through deterministic generalizations based on prejudices. It requires a comprehensive understanding of the singular situations and conditions in which informality occurs at the different scales of families, households, businesses, communities and neighbourhoods. In other words, it implies making the characteristics, the motivations and the processes of the millions of urbanities that resort to informality *visible*.

Implications for Rethinking and Designing Low-Cost Housing in Developing Countries

Informal settlements and slums are home to devoted parents, hard-working adults, respectful elders, enthusiastic children and talented youngsters. Sometimes, they are also home to prostitutes, drug dealers, opportunistic traders, drug addicts and careless gangsters. It might seem obvious, but this variety of people only demonstrates that homeless citizens, residents of informal settlements and informal workers are, above anything, human beings. As such, the majority are virtuous people who have noble objectives and dreams for themselves and their families; some have less honourable interests and values; all have a combination of qualities and flaws. Architects, planners, design professionals and decision-makers interested in low-cost housing development can benefit from avoiding generalizations and from engaging instead in a careful understanding of the singularities of poor families and communities. Neither policy-making nor planning need to be based on the characteristics of the majority or the result of a statistical mean if they are instead intended to allow individuals, families and groups to identify their own needs, priorities and expectations, and to actively participate in developing appropriate responses to them. It is our role as professionals and decision-makers to develop structures, institutions, policies and plans that allow individuals and social groups to identify their own particularities and characteristics, and to work on systemic solutions that carefully respond to each situation.

It is still difficult to radically determine whether entrepreneurs enter informality out of necessity (as Banerjee and Duflo suggest) or to pursue an opportunity (as the motivational theorists seem to imply). However, what is certain is that architects, design professionals and decision-makers must often decide whether they are to be encouraged and supported, or restricted and kept at bay. Generalizations and prejudice usually lead to bad policy and poor design. Given the reactions commonly provoked by informal entrepreneurs (ranging from praise to distrust and reject), engaging informal activities and businesses is unavoidable in a serious approach to low-cost housing in developing countries.

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