

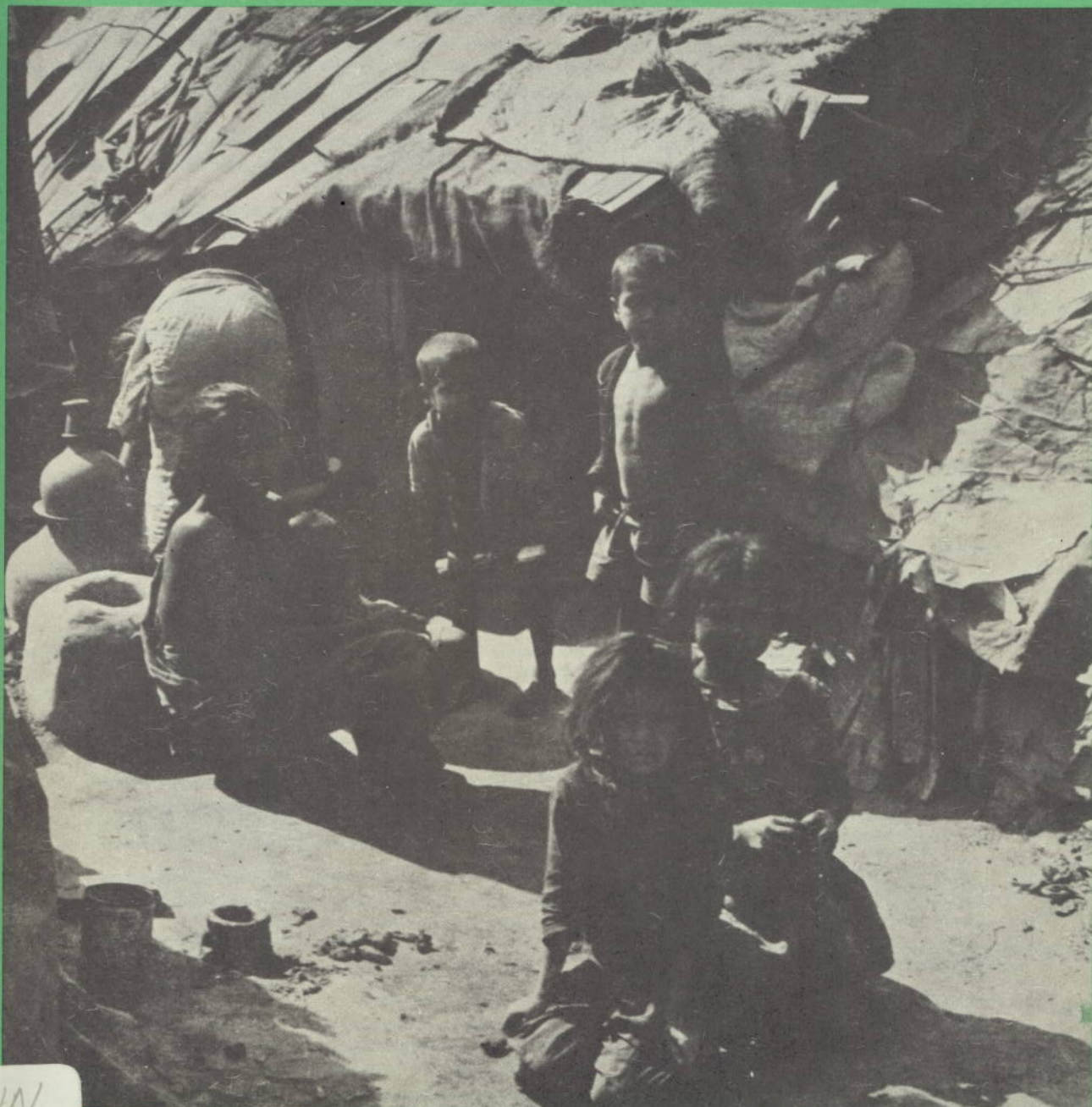
EKISTICS

ΟΙΚΙΣΤΙΚΗ

VOLUME 44, NUMBER 261, AUGUST 1977

the problems and science of
**HUMAN
SETTLEMENTS**

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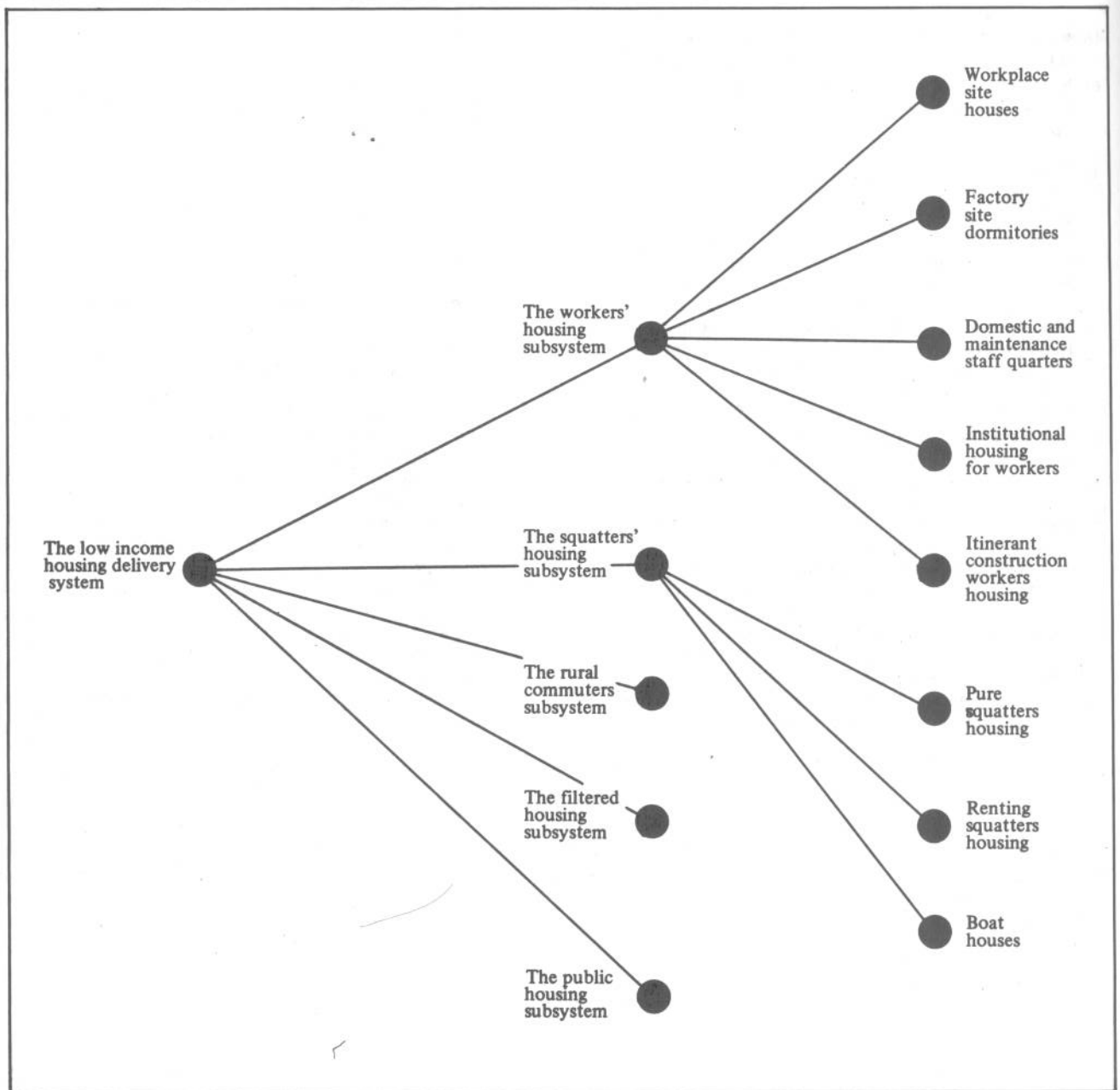
EKISTICS / ΟΙΚΙΣΤΙΚΗ: the problems and science of HUMAN SETTLEMENTS

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Fig. 1: The main components of the low-income housing delivery system in Bangkok



The low-income housing system in Bangkok

Shlomo Angel, Stan Benjamin and Koos H. DeGoede

The authors are on the faculty of the Asian Institute of Technology, Bangkok, Thailand. They presented this paper at a Workshop at Habitat, the United Nations Conference on Human Settlements, Vancouver, Canada, June 1976. The January 1975 issue of EKISTICS on housing included another article by Shlomo Angel and Stan Benjamin entitled "Seventeen reasons why the squatter problem can't be solved."

The bureaucratic approach to the housing problem in developing countries can be termed the arithmetical approach. The arithmetical approach starts by establishing an unrealistic minimum standard for housing. This standard then creates a severe housing shortage, because most of the existing kinds of low-income housing do not meet this standard. The arithmetical way to overcome this housing shortage is to construct new housing units in sufficient numbers. This then calls for a massive public housing program. In arithmetical terms:

$$\begin{aligned} \text{New construction} &= \text{housing shortage} \\ &= \text{total households-good} \\ &\quad \text{housing stock.} \end{aligned}$$

Simple as it sounds, this approach tends to obscure the more fundamental issues that make housing problems so impossible to solve. In particular, it tends to ignore the resources available for providing housing in developing economies. It relies too much on the government's limited resources, to the extent of obscuring society's actual resources by establishing too high a standard of housing — one which illegitimizes most, if not all, of the existing low-income housing stock. The result of this approach is a promise to build new public housing for everyone, a promise aiming at achieving some future "utopia." By focussing on utopia, this approach fails to see the opportunities and the potentials for real improvements of the housing conditions for the majority.

Bangkok's housing arithmetic

Although there isn't comprehensive data on the housing shortage in Bangkok, there are some related figures. The magnitude of the squatter population of Bangkok and the total population living in

temporary self-built housing, both on government land and private land, was estimated to be to the order of 1,050,000 in 1975.¹ (That is roughly 25 percent of the total metropolitan population.) This housing, considered "substandard," can be taken as a gross measure of the housing shortage. Assuming that the low-income population of the metropolis will grow at 5 percent per annum, approximately the same rate as the metropolis as a whole, this figure could reach 1,700,000 in ten years. Housing this population in standard public housing, at the target of five persons per unit set by the National Housing Authority, would require 340,000 new low-income flats in the next ten years.

The Thai government has recently shown its willingness to face the difficult housing task. It has announced its plan for allocating US\$175 million per year for building housing at the rate of 20,000 new units per year. This amounts to a ten-fold increase in the annual production of public housing. Not all of this housing is for low-income people. Of the current allocation, only US\$50 million (29 percent of the total) will be used to provide approximately 13,620 low-income flats,² at an average cost of US\$3,750. Replacing the squatter communities of Bangkok with new public housing over the next ten years will require a 25-fold increase in annual production. This is, unfortunately, unrealistic, if simply because the government cannot hope to obtain the massive financial resources required for such a program.

To construct housing estates, the National Housing Authority borrows funds at approximately 8 percent interest for 15 years. The economic monthly rent needed to amortize a loan on one US\$3,750 unit, and to maintain and administer the estate at minimum levels is approximately US\$39 per month. The typical rent, at the Huay Khwang estate, for example, is US\$10 per month. This means that the few families that succeed in getting public housing will be subsidized at the rate of US\$29 per month, or that 75 percent of total housing cost will be borne by the government, and paid through taxes.



Fig. 2: Crowded dormitory quarters of single women at a textile factory site are typical of industry-supplied low-income housing.



Fig. 3: The interior of an itinerant construction worker's house



Fig. 4: These houses at Klong Toey Port are in Bangkok's largest squatter community.

With the pressing development needs of the coming decade, we cannot expect such a heavily subsidized program to materialize. There is too much to do, and too little to do it with. Thus, we can begin to see that the arithmetical approach to the housing problem leads to an unacceptable solution.

The solution: the existing housing system

There is no need to dream of utopias. There is a system which delivers housing solutions daily to satisfy the needs of the low-income people.

The low-income housing delivery system in Bangkok is made of several subsystems (fig. 1, p 78): The workers' housing subsystem, the squatters' housing subsystem, the filtered housing subsystem, the rural commuters subsystem, and the public housing subsystem. These again are divided into several types. The information about the magnitude of housing provision by each subsystem is still unknown. What is known is that altogether they provide housing for *all* the low-income people in the city.

The workers housing subsystem: This is made up of housing for low-income earners and their families. This subsystem can be further divided into several different types.

The first type is workplace site houses. These are usually wooden houses constructed on factory sites with secondhand materials. The workers construct these houses themselves and live there with their families. Other facilities such as the racecourse, have extra land, and allow their workers to build houses on that land.

The second type is factory site dormitories. These are usually crowded quarters with a number of young single people sharing one room. The workers have very little room for themselves and very little privacy (fig. 2).

The third type is domestic and maintenance staff quarters. Most middle- and upper-income residential compounds contain quarters for maids, gardeners, or guards, and their families. These are provided as payment in kind for low-income workers. In addition, virtually all public institutions and business premises provide some housing for staff on site. Living quarters can be found inside the Ministry of Education compound for example. Temple compounds usually contain housing for maintenance staff on their grounds.

The fourth type is institutional housing for workers. These are usually barrack-type houses constructed for workers and their families. A soldier's extended family is allowed to live with him in the barracks and families of railway workers benefit from their company's large tracts of land.

Finally, the fifth type is itinerant construction workers' housing. Construction workers typically

move their houses and their entire families from one construction site to the other. They build their houses out of the available construction materials, and stay on the site in temporary structures until the project is completed (fig. 3).

The squatters housing subsystem: This housing is characterized by temporary wooden dwellings usually on unfilled land. These are built by low-income people on land that does not belong to them. This subsystem can be broken down into two main types: pure squatters and renting squatters.

Pure squatters live in houses built on land usually belonging to government agencies, and do not pay any land rent. Khoman found approximately 200,000 people living in pure squatter settlements throughout the metropolitan area³ (fig. 4). Roughly 54 percent of these people have access to both piped water and electricity.⁴

Although this is the poorest quality housing in the city, we find a large number of people who are satisfied with their housing conditions. A recent house to house survey was conducted in Klong Toey, Bangkok's largest pure squatter area.⁵ People were asked how satisfied they are with their present housing environment: 77.4 percent of the people believe that the security in the area is good and acceptable; 62.3 percent say that the environment around which they live is good and acceptable.

The second type of squatters can be termed renting squatters. These families build their houses on small plots of land that belong to private landlords. The landlord usually consents, and the people pay a nominal land rent. The average land rent for one 80 sq m plot is approximately US\$2-3 per month.⁶

These squatter settlements contain approximately 850,000 people, most of them in the low-income category. There is usually either no-tenure agreement or a short-term, one to two years, agreement. Such an agreement guarantees stay but prohibits the transfer of the house to another family or the building of permanent concrete structures. Roughly 93 percent of these people have access to both piped water and electricity⁷ (fig. 5).

The squatter housing subsystem can also be divided into two different groupings: squatter communities and mini-squatters. Most squatter communities are rather small in size, averaging 1,000 to 1,500 people per location. However, Agrawal estimated that an additional 100,000 people live in individual houses scattered among other land uses all over the city. These are referred to as mini-squatters.⁸ A sample square kilometer of the mini-squatter survey is shown in figure 6.

The current cost of construction of a typical 33 sq m house in a squatter community by a low-income family in Bangkok, using second-hand materials, is approximately US\$560. It is made of wood, with a galvanized iron roof, and a toilet, and a concrete container for sewage (figs. 7 and 8). Using new materials, it costs US\$660 in current prices.⁹



Fig. 5: These squatters rent their land with no right of selling the improvements they make from building their house.

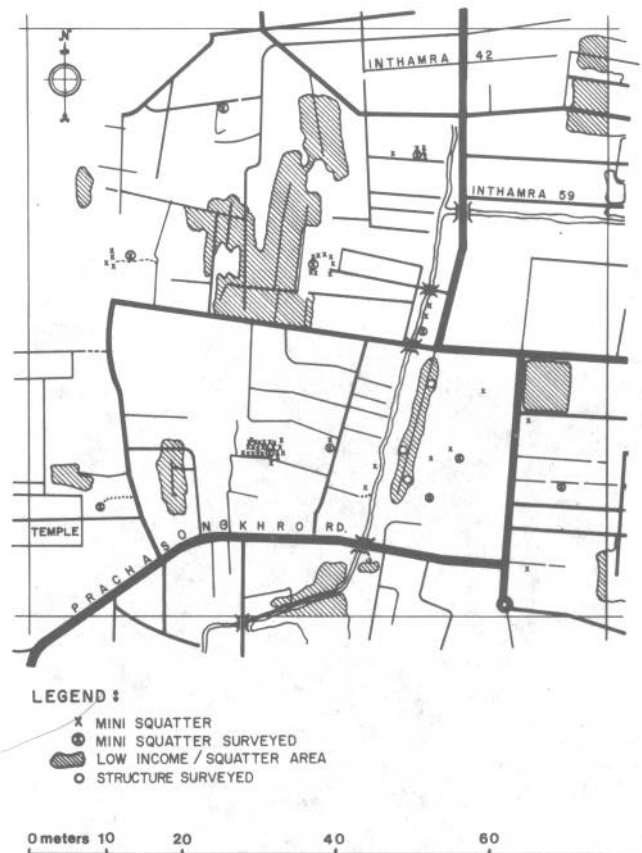


Fig. 6: There are both clusters of squatters and individuals within this sample square kilometer of Bangkok. (Source: Agrawal)

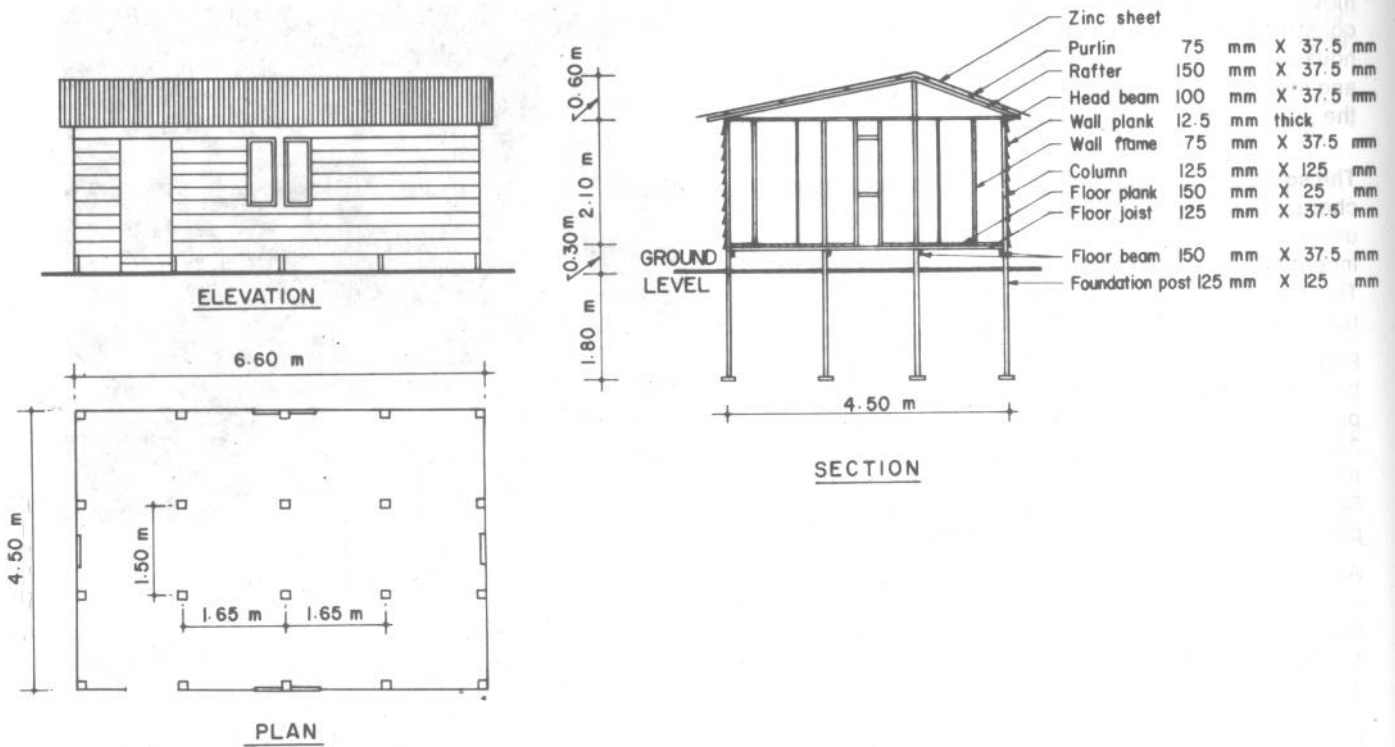


Fig. 7: An archetypical self-built house in Bangkok. (Source: Selvanathan)

Fig. 8: A typical house in a community where squatters rent the land. The house would cost about US\$650 in 1976.

Fig. 9: Aerial view of a typical squatter community



Given the income distribution in Bangkok, 98 percent of the households could afford this typical house using second-hand materials, if they spent ten percent of their income on housing in the next 20 years; 96.5 percent could afford it using new materials, 87 percent could afford this house and be able to pay average land rent in renting squatter communities.

Boat houses: A 1970 survey estimated that 4,000 people live on boats that are used for transporting goods for short distances, but usually occupy permanent locations on the canals of the city.¹⁰

Rural commuters subsystem: There is a considerable amount of housing in the rural areas that provides shelter for people commuting to work in the metropolis. Each morning, many rural low-income people commute to the city, by the railroad and highway. Many others arrive by boats along the extensive canal system that reaches into the heart of the city.

Filtered housing subsystem: These are dwellings created by dividing larger houses and shophouses into small cubicles and renting these cubicles to low-income people. This practice is prevalent in the older parts of the city, particularly in the Chinese section. A three or four story shop-house may contain a number of households on its upper stories. The shop-houses are centrally located to take advantage of economic opportunities.

Public housing subsystem: These are subsidized flats provided by the National Housing Authority (NHA) or the public agencies preceding the NHA's formation in 1973. From 1949 to 1973, approximately 12,300 housing units and 6,400 plots of land were provided by these agencies.¹¹ Two housing estates have been built to date, and several others are in the process of construction, following an upsurge of public spending on housing by the outgoing government in 1975.

Housing everyone

This short survey gives us a sense of the elements in this complex low-income housing delivery system. It is a live system. The majority of its components rely little on planners, engineers and other professionals, receive little attention from government housing agencies. Yet, because of this delivery system, there is no "housing shortage" in Bangkok.

Everybody in this city is housed in one way or the other, and there are no people sleeping in the streets.

This system is reliable, and can provide a great number of housing solutions, whenever they are needed. There are many people maintaining and caring for it. If they stopped, the government would be in a difficult position indeed, having to supply the numbers of needed housing units by itself.

We must now ask ourselves, how can society gradually improve the performance of its low-income housing delivery system?

Meaningful participation of the entire society in improving its housing is inherently a step-by-step process. The first and most fundamental step is the recognition of the delivery system as a total system of housing. We must be able to perceive it and deal with it as a whole. The second step is to recognize the most basic inputs of this system: the land, and the people's resources. Once these are recognized, many improvements are possible and feasible.

There is no sense focusing on technical improvements, let alone "end-products," before such a fundamental recognition takes place. Rather we must orient our activities — technical, academic or political — towards advancing and strengthening the recognition of the low-income housing delivery system and its basic parameters.

The recognition of land needs

Housing takes up land, and a lot of housing takes up a lot of land. It is estimated that 40 percent of the population of Bangkok, that is, approximately 1.6 million people, is low-income, with family incomes of less than 2,000 baht (US\$100) per month. Since migration from the poorer rural areas is continuing, we can expect the percentage of low-income people to remain at least at this level for some time to come.

We do not know how much land these people occupy, but we can get some estimates. The recent survey of the magnitude of the squatter population of Bangkok estimated that 8 percent of the total built-up area of the city, and 16 percent of the total area devoted to housing in the city, was taken up by squatters.¹² Although the squatter population, totalling roughly one million, does not match the low-income population, we can take these figures as approximations.

With current densities of 300 persons per acre in these squatter areas not being very different from NHA planned densities, approximately 8 percent of all the urbanized land area of the metropolis, both present and future, must be devoted to low-income housing. Roughly this percentage is devoted to this land use right now, but it is not recognized as such, and is at best accepted as only being a temporary situation. Each landowner who rents to squatters cherishes the hope that one day his land could be used for some profitable office building, hotel or luxury apartment house.

Realistically speaking, the majority of the land now occupied by low-income people needs to remain in low-income housing use. Since it is unreasonable, both from the social and the individual point of view, to move all the low-income population gradually out of town to where land is cheap, we must expect to find land for low-income housing everywhere in

the city. This is the situation now, and for a good reason.

Low-income people provide the backbone of the country's productive workforce. They work everywhere and they are needed everywhere. They need the access to the employment opportunities, the markets, and the public services. Reciprocally, the rest of the population requires their services. It is therefore unreasonable to destroy this relationship and to gradually pull low-income people out of the city, where land prices are lower. This will destroy the social fabric, will increase tensions between rich and poor, and will end up requiring massive public investments in services and work opportunities for outlying communities. Such incentives and investments in creating work opportunities are likely to fail because the large majority of low-income people work in the "informal sector" on the fringes of the formal organized sector. New peripheral towns can only expect to attract the more organized and well-managed productive units, where workers are usually better organized and better off economically. The informal economy of Third World cities benefits most from an arrangement of mixed land uses, where mixture of different income classes is at a maximum, and where low-income people have maximum access to a large variety of income earning opportunities.

A proper distribution of land uses requires that there will be land for low-income housing everywhere in the city. Translated into quantitative terms, this requires that approximately 8 percent of the land in each district in the city or alternatively 16 percent of the residential land be zoned for low-income housing, old zones as well as new zones. Land shortage should be no argument. There is no shortage of land in Bangkok. An estimated 40 percent of the urbanized area is still vacant.¹³

Recognition of people's resources

While urban housing is high on the list of development priorities, a limited amount of public funds will be allocated to this sector. Hence, the low-income housing delivery system is likely to be dependent on the people's own resources and resourcefulness, for a long time to come. Maximum effectiveness in the use of public funds could be achieved when these funds are used in ways which make it possible for the people to maximize their own resource inputs into their housing efforts.

What do we know about the people's resources?

There is already substantial evidence that low-income families direct a considerable amount of resources toward their housing. Parvez has estimated in monetary terms the value of these housing resources.¹⁴ Assuming, conservatively, that the value of each house is US\$550, and estimating the number of houses in the squatter areas in Bangkok to be in the order of 140,000, we arrive at a total assessment of the value of squatter houses in Bangkok — US\$77 million.

People's housing input is considerably restricted by their lack of tenure security, their perception of the probability that they will be evicted from the land.

Among a large number of variables, tenure security was found to be the most significant variable affecting housing input in a multiple regression analysis. Tenure security alone explains over 40 percent of the variation in housing input.¹⁵

Community efforts are often invisible and difficult to articulate and, therefore, are the first victims of some of the more heavy-handed approaches, such as slum clearance. We must remember, however, that even the more enlightened approaches to housing, such as slum and squatter improvement, often emphasize what can be "seen," and neglect what can later be *experienced* by the inhabitants. How many improvement projects are occupied by the original population of the "unimproved" community? Very few.

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INCREASING HOME OWNERSHIP

Home ownership has many advantages. It offers greater security to families; investments in housing create appreciating assets; owner occupiers are much more likely than tenants to invest in the maintenance of their homes; and expenditures by governments for estate management services are less.

There is a dearth of information on measures for stimulating home ownership, especially among those whose incomes are low in relation to the cost of housing. Only a few studies have attempted to give solutions to the housing shortage from the point of view of the resources of prospective owner occupiers.

The rising costs of home ownership mean that only a few householders can afford to pay full cost for a new house and the percentage that can afford to buy one out of income from savings is much smaller still. A variety of factors have caused this increase. First is the high price of building land. In the United Kingdom, for example, it is said that the residential value of land when expressed in monetary terms is about 40 percent of the building cost. In many developing countries this ratio is higher due to the lack of effective control on the action of land speculators. Second, the space, quality of materials, and environmental standards which have been adopted often tend to push the cost beyond the resources of the average family. Third, units costs

are increased due to low construction capacity and the inefficiency of the construction industries of many countries. Fourth, the high interest rates on loans as well as the stringent conditions attached to them limit the numbers who can afford them.

If house cost is to be within the resources of the owner occupier, it has been suggested that the repayment on house loans over a reasonable period should not exceed 20-25 percent of his income. Income multipliers for determining house costs related to the income of the prospective owner occupier, ie, the amount he is willing to set aside from his income for loan repayment, the repayment period, and the interest on the loan, are shown in the accompanying table. The income multiplier also increases as the rate of interest decreases.

In Nigeria, the cheapest house in the public sector costs N4,200,000. When this is related to the highest income multipliers shown in the table, it is evident that those earning below N1,148.00 (45 percent) could not afford houses. This cannot be ignored.

While accepting the quality factor as one of the bases for satisfying housing needs, the objective should be to enable the home owner to improve his house in such a way that what appears to be low quality today can be upgraded to a higher quality at a later date. In practical terms, it has to be understood that there is a limit to upgrading without extensive structural alterations.

The spirit of self-involvement can be encouraged especially among the income group who do not earn enough for repaying mortgage loans on a reasonable size of accommodation. In many developed countries the principle of percentage completeness takes two forms. In the UK for example, many young couples know they cannot acquire a new house on mortgage because of the disparity between their incomes and high house costs. They then buy an older property and in succeeding years improve, extend and upgrade the fabric of the house — floor boards are replaced, new kitchen fitted, complete rewiring, leaking roof repaired, complete central heating installed, another bathroom added, and so on. Although there are as yet no statistics as to the value added in this way, the point to be stressed is that these additions take place as the economic resources of the couples are available.

Income multipliers for determining ability to repay house loans

Years of repayment	Percent of income	Income multiplier for maximum cost of house
10	20	1.44
10	25	1.80
10	30	2.16
15	20	1.88
15	25	2.35
15	30	2.82
20	20	2.20
20	25	2.76
20	30	3.31
25	20	2.44
25	25	3.05
25	30	3.66

Kunle Ade Wahab. A system for widening the scope of home ownership. Department of Estate Management, University of Ife, Ile-Ife, Nigeria.