



PLANNING AND DEVELOPMENT COLLABORATIVE INTERNATIONAL INC.

# PRIVATE SECTOR HOUSING DEVELOPMENT IN MONGOLIA

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PROVIDES GOVERNMENTS AND PRIVATE CLIENTS IN DEVELOPING COUNTRIES WITH SERVICE, CONSULTING,  
MANAGEMENT, FINANCE, ECONOMIC, AND TRAINING FOR URBAN REFORM AND ECONOMIC DEVELOPMENT.

# **PRIVATE SECTOR HOUSING DEVELOPMENT IN MONGOLIA**

**Prepared for**

**RHUDO/Thailand  
Bangkok, Thailand**

**Prepared by**

**PADCO, Inc.  
Washington, DC**

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## **FOREWORD**

Field work for this assignment took place in Ulaanbaator, Mongolia over a two week period in August 1992. The PADCO team consisted of Daniel Coleman and Duane Kissick. A draft report was prepared and left in the field. RHUDO/Bangkok has provided comments to the consultants which have been incorporated in this document. Where appropriate, findings from the UNCHS's excellent Urban Sector Review: Mongolia's Peoples Republic, August 1991 have been incorporated into this report.

Note that at the time of the field mission, one US Dollar was equal to Tugrik (Tg) 200.

## EXECUTIVE SUMMARY

The former communist country of Mongolia has now adopted a policy of encouraging the growth and development of the private sector to help it meet its economic and social potential. With the termination of significant technical and financial assistance from the former Soviet Union, the government recognizes that it must now rely on its own development resources to achieve these ends. At the same time, new-found democratic freedoms have encouraged the people to voice their demands for more (and better) goods and services. The housing and urban sectors have been affected as well by these changes, and as a result their restructuring is underway.

Before Mongolia's current economic and political reforms, it was the government's policy to implement centrally planned and constructed housing programs. The "formal" sector housing stock developed in this fashion largely consists of multi-family, multi-story, housing blocks using pre-fabricated construction techniques. Since the government was unable to satisfy housing demand as a result of its policies, a significant "informal" housing stock evolved, consisting of the traditional demountable "ger". Today, gers comprise about one-half of the housing stock in Ulaanbaator, and even higher percentages in the other urban centers.

With the withdrawal of Soviet funding, which financed about 40 percent of formal sector housing, the onslaught of hyper-inflation and the fall in national production, central and local authorities have begun to recognize that they must not only curtail spending programs, but at the same time, transfer responsibility and costs to other economic entities, including individuals. As a result, a *de facto* national housing policy has evolved to include the following points:

- De-emphasize the development of high-rise apartment building. This recognizes that the government does not have the capital to build major complexes.
- Upgrade those ger boroughs located in areas suitable for housing, provide existing households with tenure, and permit them to build housing with permanent materials. This recognizes that government does not have the resources to replace gers with formal housing.
- Promote the development of single family, privately-owned housing. This places more responsibility on individuals to resolve their housing problem.
- Privatize housing service activities such as architecture, engineering and construction companies, while at the same time retaining public ownership of infrastructure utility companies.

The Government of Mongolia needs to develop a comprehensive and formal housing policy to encourage the private provision of housing. At the same time, the government must prepare a plan which lays out in detail the steps needed to facilitate the conversion of the housing sector from a centrally planned economic system to a market oriented system. Over the next twelve months, the government should make the following efforts:

- Formulate a housing policy and conversion plan to guide the private provision of housing.
- Design an infrastructure finance and cost recovery scheme for installing infrastructure services at the sites designated to accommodate new housing development.
- Privatize those government services which are normally considered within the purview of the private sector, including architectural and engineering services (now underway), construction companies and building materials companies.
- Design an incentive program to foster the creation of new companies to manufacture building materials, especially those that are currently imported.
- Prepare the necessary regulatory and control mechanisms for the development of private sector housing, including land planning guidelines, minimum standards for infrastructure (including provisions for incremental improvements), a land registration system and a land valuation system based on appraisals.
- Introduce public officials and emerging private developers to the principles of private land and housing markets, public/private roles, and other training to help them prepare for their future development roles.

An immediate step in developing a private sector housing market would be to plan and implement a workshop on shelter development and land and housing markets. Such training programs have been previously tested with positive results in countries similar to Mongolia. A brief outline of the topics to be covered in this training workshop is presented below:

- The structure and function of private land and housing markets versus a centrally planned approach to housing delivery.
- Eliminating obstacles to an efficient land and housing market.
- The characteristics of a private versus a public housing developer.
- Shelter delivery: public and private roles in a market economy.
- Guidelines for conducting land and housing market analyses
- Guidelines for the identification of target groups and target group shelter preferences.
- Guidelines for site selection.
- Guidelines for product development and pre-feasibility studies: weighing standards, costs and affordability.

Finally the workshop will undertake a case study exercise to design a feasible municipal/private development scheme. It is expected that 20 to 25 persons from both the public and private sector in Ulaanbaator and other cities will participate in this workshop, to take place in Mongolia in November, 1992.

Two additional workshops should also be developed and implemented. One would consist of a workshop to introduce public and private developers to management concepts and tools to improve the efficiency and quality of shelter construction. The other workshop would focus on housing finance, including concepts of mortgage lending, property appraisal, resource

mobilization, competitive bidding, estimating costs, affordability analysis and financial feasibility. Funding sources for these workshops need to be identified.

Given the stage of development of Mongolia's housing sector, a broad range of technical assistance needs were identified during this assignment. Some of the most crucial needs include the following:

- Assistance in the elaboration of a housing and land policy to guide private housing provision, including the preparation of an action plan to govern the conversion to a private sector housing delivery system.
- Assistance in the elaboration of a housing mortgage law, a planning law and a land use/property law.
- Assistance in the development of revised land use standards, site development standards, and building regulations.
- Assistance in the development of revised procedures for implementing development control mechanisms.
- Assistance in the development of a computerized land registration system and identification of geographical and land information system requirements.
- Assistance in the development of a pilot private housing development scheme including basic infrastructure services and a financing plan.
- Assistance in the elaboration of a strategy articulating the interrelationships between private land development, single family housing, building materials, and related technologies (furnaces, septic tanks, hot water heaters, etc.)

# PRIVATE SECTOR HOUSING DEVELOPMENT IN MONGOLIA

## Introduction

Former communist Mongolia has now adopted a policy of encouraging the growth and development of the private sector to help the country meet its economic and social potential. With the termination of significant technical and financial assistance from the former Soviet Union, the Government of Mongolia recognizes that it must now rely on its own development resources to achieve these ends. At the same time, new-found democratic freedoms have encouraged the people to voice their demands for more (and better quality) goods and services.

The housing and urban sectors have been greatly affected by these changes; as a result, their restructuring is underway. It is the purpose of this report—and of future training programs—to contribute to this process by: a) formulating recommendations to support the emergence of the private sector in the provision of new and affordable housing; and b) promoting a better understanding of the dynamics of private sector-led land and housing markets.

Section 1 provides a brief overview of the housing and urban sector in Mongolia, with an emphasis on the capital city of Ulaanbaator. In Section 2, preliminary guidelines are suggested for the establishment of a private housing delivery system. The last two sections focus on technical assistance needs, including a proposed training program. Appendices to the report provide background and responses to specific elements of the consultant's scope of work.

## 1 Housing and Land Development

Before Mongolia's current economic and political reforms, it was the government's policy to implement centrally planned and constructed housing programs. The "formal" sector housing stock developed in this fashion largely consists of multi-family, multi-story, housing blocks using pre-fabricated construction techniques.

As government was unable to satisfy housing demand as a result of its policies, a significant "informal" housing stock evolved. This owner-constructed housing is, for the most part, based on the traditional demountable "ger" or construction—the traditional type of housing used by Mongolian nomads—and more recently wooden structures built within a family's ger compound. While policies are now changing, gers have been considered temporary housing by public authorities.

For the sake of classification, all housing in Mongolia can be grouped into five main types:

- Gers: These are privately owned demountable and portable dwellings used by nomadic households, often complemented by simpler tented forms. They are most often found in rural areas.

- **Ger boroughs:** These consist of compounds of gers and individual, usually wooden, structures. In urban areas ger boroughs are synonymous with informal housing. They are located on the immediate urban fringe and on rent-free land. The city allows them to occupy the land and also permits them to subdivide the land into ger compounds. Since ger boroughs were considered temporary, cities have provided only electricity to them at the same standard as State housing.
- **State Housing:** These are government owned, rented and managed housing units, mostly multi-story apartment buildings, with a full array of urban services. These units may have been constructed by the former Ministry of Construction, municipalities, public enterprises or cooperatives. Most such housing was constructed of pre-cast concrete panels, assembled on-site.
- **Private Housing:** Newly emerging formal, privately built and owned housing consisting mainly of single family detached structures. While this type of permanent housing is expected to be provided with all urban services, these services are not yet available due to financial problems. Such housing is classified as permanent.
- **Summer housing:** Summer cottages owned by employers or individuals for seasonal use. They are not for permanent use and are never used in the winter.

### **1.1 Housing Stock**

According to the census, there were 119,918 formal permanent dwelling units in 1989, and all these units were located in urban areas. Until a few years ago, the State was able to construct approximately 3,000 formal units per year with Soviet assistance. As a result, the formal housing stock is now probably on the order of 125,000 formal units. Those urban and rural households not occupying formal housing inhabit some form of movable and/or temporary housing, such as a ger or a ger *cum* wooden structure. It is estimated that this informal type of housing accounts for about 360,000 units.

In Ulaanbaator, about 53 percent of the population lives in formal housing, while 47 percent are housed in ger neighborhoods. Given the virtual stoppage of State housing construction, it is probable that over the next several years most new households will be accommodated in ger boroughs.

### **1.2 Housing Costs**

Housing costs are in a state of flux in Mongolia. Inflation rates are similar to those in Russia (nearly 1,000 percent to date in 1992). Since virtually no housing is changing hands, and the construction of public high rise housing is moribund, the most accurate measure of housing costs is the price of materials to build new housing in the private sector.

Key building materials such as cement and brick are still controlled by government enterprises which are subject to price controls. Nevertheless, these companies are periodically permitted to adjust material prices. For example, the price of a ton of cement was increased in July 1992 from Tg 450 to Tg 2,799, a single increase of over 600 percent.

In such an inflationary price environment, estimating housing costs is virtually impossible. At one private housing project, the project manager estimated that a 110 sq. m. single family home being built in August 1992 would cost Tg 400,000 (approximately US\$2,000). However, since the houses were only 30 percent complete, he could not estimate the ultimate price even though he was stockpiling as many building supplies as he could.

### **1.3 Land**

The Constitution of Mongolia provides for the private ownership of land. However, the vast majority of land within municipal boundaries is owned by government. Public land within municipal boundaries is considered a municipal asset. The Municipality of Ulaanbaator, for example, has the right to decide how land within its boundaries is to be allocated, used, priced and developed. These functions are the responsibility of the Department of City Planning and Architecture which has recently established an embryonic land registration office to record and register land transactions.

Given the lack of financial resources available to the cities, land assets constitute a city's most critical and valuable resource. It is thus essential that land transfers to private ownership occur in a fashion which achieves the most public good. Such transfers should be used to bring about rational development patterns, establish a sound fiscal base, stimulate private land markets, and raise much needed resources for infrastructure improvements. To achieve this end, the Government of Mongolia should develop and adopt a comprehensive land policy to guide necessary reforms.

### **1.4 Provision of Services**

The availability of urban services in Ulaanbaator is uneven. As noted, all services—water and sewage, electricity, central heat, and solid waste removal—are provided to State housing units. Such services are also supposed to be available to families building single family housing units. But, to date, only electricity has been provided because of a lack of financial resources.

In the ger boroughs, electricity is the only service provided at the same level of service as in State housing. Piped water is not provided, and the usual recourse for ger dwellers is to purchase water from one of the 250 reservoirs available for this purpose or from a tanker. Human waste disposal in the gers is by pit latrines, which are emptied by the municipality in winter when the sledge is frozen and easier to extract. For heating, the ger structures have solid-fuel stoves which are also used for cooking.

Given the probability that ger boroughs will accommodate most new urban households over the next several years, a strategic plan for priority ger infrastructure upgrading should be formulated.

### **1.5 Housing Finance**

Normally, the construction of housing in Mongolia is financed via the allocation of funds from the national government to the various provinces and cities. However, housing was also funded by municipalities, by State-owned enterprises for their workers, and by

grants from the former Soviet Union. The latter funding accounted for a significant part of new housing construction. As grants from the former Soviet Union are no longer available and general resources are scarce, dwelling unit completions have dropped from the rate of 3,000 units annually in the 1980s to only 130 units completed in the first six months of 1992.

Commercial banks are permitted to make housing loans. Commercial bank loans, along with loans by the State-owned enterprises, constitute the principal potential sources of housing finance today. However, banks have effectively stopped lending for housing construction due to the risks associated with lending during a period of high inflation. At the same time, housing loans are now too expensive for households to afford; interest rates are reported at as high as 55 percent per annum for a fifteen year term.

In 1992, the City of Ulaanbaator received a central government grant of Tg 12 million to assist low income households. These funds were intended to subsidize interest rates and provide discounts for construction materials. Of this amount, Tg 10 million has been disbursed already. The city also intends to use funds generated from the privatization of city-owned stores and enterprises for housing purposes.

#### **1.6 Housing Policies-Past and Present**

The Government of Mongolia has not yet produced a written housing policy. Nevertheless, the Ministry of Construction and Urban Planning is in the process of preparing documentation that suggests where it would like to direct the housing sector over the next decade or so. Moreover, the government's intentions can be surmised from the housing activities that are currently being promoted. (The study team has limited its assessment to new housing development policies; privatization policies are not covered.)

Current housing activities are predicated on severe financial deficits. With the withdrawal of Soviet funds, the onslaught of hyper-inflation and the fall in national production, central and local authorities recognize that they must not only curtail their activities, but at the same time transfer responsibility and costs to other economic entities including individuals. As a result, *de facto* national housing policy includes the following points:

- a. De-emphasize the development of high-rise apartment buildings. Government does not have the capital to build major housing complexes.
- b. Upgrade those ger boroughs located in areas suitable for housing, provide existing households with tenure, and permit them to build housing with permanent materials. This policy recognizes that the government does not have the funds to replace the gers with formal housing.
- c. Promote the development of single family, privately-owned formal housing. This places more responsibility on individuals to resolve their housing problem.

- d. Privatize housing service activities such as architecture, engineering, and construction companies, while at the same time retaining public ownership of infrastructure utility companies.

With respect to municipal land development schemes, there are a number of key policy issues being debated. These issues are:

- a. Whether to sell the lots and, if so, whether to sell them at fair market rates. (Some parties have suggested that all municipal lots will be sold beginning in 1993.)
- b. Whether to charge for the installation of infrastructure works, either on- or off-site, in municipal land development and sewer upgrading schemes.
- c. Whether to establish a specialized housing bank to finance new housing or to use commercial banks for this purpose.

### **1.7 Private Sector Development of Land and Housing**

The City of Ulaanbaator is counting on the development of individual housing by the private sector to provide the bulk of formal housing in future years. To date, there have been almost 7,000 applications to build private homes, of which 3,000 applicants have received permission to proceed with construction. Of these, only 1,256 units are under some form of construction, and relatively few appear to be occupied. A key constraint is the lack of basic urban services.

Private sector housing programs were conceived a few years ago as an alternative to government-built housing programs. Sites on the order of 50 hectares in size were designated for such housing and were platted for allocation to qualified applicants. With one exception, all sites are located relatively far from the city center, infrastructure networks, and employment areas.

To assist prospective home builders, the MCUP sponsored the design of some 56 dwelling unit prototypes, complete with plans and specifications. The choice of one of these prototypes was intended to facilitate the approval and financing process. Moreover, the City of Ulaanbaator set up a Bureau of Mediation to manage its private housing program and made arrangements with the commercial banks to provide financing for dwelling unit construction.

In Ulaanbaator, the management procedure for allocating municipal lots and promoting housing construction is being handled principally by government agencies. Interested participants must first make a formal written request to the city's Bureau of Mediation for a lot on which to construct a home. The applicant also completes a formal written application form. The applicant's letter provides relevant information on what the applicant desires—the size of the house, unit cost, the amount of the loan required, the anticipated down payment, the desired location, etc.

The applicant's employer is required to write a letter to the city endorsing the applicant's request. Since there is (or rather was) the possibility of a bank loan involved in the process, the employee is in effect requesting the employer to guarantee his/her request for financing. If the applicant were to default on the loan, the employer would be expected to make payment on the loan. Since bank loans are not now available, the letter from the employer must now verify that the applicant has recourse to sufficient funds to complete construction of the home.

The two letters described above and the application form are transmitted to the Bureau of Mediation. A meeting is scheduled with the applicant to select the lot and the appropriate dwelling unit plan. The Bureau may then approach a bank to make a formal request for a loan to complement the applicant's own funds. If the bank were to approve the loan, then the funds would be disbursed to the applicant for house construction.

The applicant may select a contractor or request assistance from the Bureau in this regard. Both private and public contractors are involved in house construction. In some cases, enterprises are building houses for the use of employees.

It should be pointed out that the city only charges a small fee if the applicant requests technical assistance in selecting a contractor or assistance in construction supervision. Otherwise the city does not charge for the application process, for the building permit or for any other usual development and construction services.

Most importantly, the city does not sell the land or otherwise charge the applicant for it; the applicant does not receive title to the property but may use it in perpetuity. The homeowner will likely pay for urban service hook-ups once the main line services are installed.

The private sector housing program in Ulaanbaator is stymied for several reasons: a) the lack of urban service provision; b) the high cost of building materials; c) the lack of building materials other than cement and bricks; and d) the lack of housing finance.

Plumbing and electrical materials and fixtures must be imported and there is little hard currency for this purpose. Furthermore, the cost of building materials, even those locally made, is soaring. As noted above, the lack of access to long-term loans for housing in an inflationary environment compounds these problems.

### **1.8 Urban Ger Boroughs—A Special Case**

Special attention should be paid to the urban ger boroughs where 47 percent of the population of Ulaanbaator live (in other cities and towns, much higher percentages of local residents live in ger boroughs). Ger boroughs are located throughout Ulaanbaator on "temporary" sites approved by the municipality. While the city allocates sites, it does not play a role in their layout. Nevertheless, the ger settlers manage to arrange the site in some semblance of order. For that reason, there is a degree of organization that often does not occur in informal settlements throughout the world. For example, the ger settlers have made road reservations.

The key problems in ger boroughs relate to tenure and urban service provision. Until recently, the government expected to eventually replace all gers with State housing; thus the government considered the gers to be temporary. With respect to urban service provision, electricity is available; however, households must rely on pit latrines, individual stoves for heating, and community water tanks.

Squatting on municipal land appears to be an emerging problem, although this has not been confirmed. Some officials report that squatters can move into an area overnight and construct a ger unit and a fence without any knowledge of city officials; others claim this is not the case. Nevertheless, there is growing concern that squatting may occur on land designated for private sector housing developments.

Over the past few years, the government has realized that some ger boroughs should be recognized as permanent settlements. Detailed survey and planning work for an upgrading program has been initiated which will identify those gers which must be relocated and those which will be upgraded with infrastructure, community facilities, and a greater degree of plot rationalization.

Given the financial straits all government units in Mongolia face, it is unclear how these upgrading schemes are to be financed. Moreover, in the initial physical planning activities for these schemes, no consideration has been given to cost recovery. Given the fact that gers will probably accommodate most new households over the next several years, these issues deserve further consideration.

### **1.9 Housing Needs**

With an annual population growth of 2.62 percent, Mongolia will continue to require new housing at an increasing rate (as an indicator of this need, 17,000 marriages occur annually throughout the country). Formal housing needs are concentrated in urban areas, where 56 percent of the population resides; especially in Ulaanbaator, which makes up about one half of the urban population. For the foreseeable future, most rural dwellers will continue to live in movable gers, but migration towards urban areas is expected to accelerate.

Based on population growth alone, some 9,000 units of new housing would be required for urban dwellers this year, with this number increasing slightly for each subsequent year. Given that the formal housing delivery structure cannot be expected to meet this demand in the near future, it is essential to develop an improved form of "ger" development. With respect to existing ger boroughs, it is also essential to provide these households with tenure and improved urban and community services. In 1989, the total number of urban households living in the ger boroughs was estimated at 174,000.

### **1.10 Dwelling Unit Preference**

Little information exists on dwelling unit preferences since surveys of this type are unknown in Mongolia. However, a limited UNCHS study of both ger and apartment dwellers provided some qualitative information. It noted that households living in apartments would like to live in more spacious and comfortable housing, but not necessarily in a private single

family home on the periphery of the city. Families living in gers would also like to live in better housing with full infrastructure services, but not necessarily in an apartment if this precluded them from owning the land. Apparently higher educated households would prefer a single family home, but only if urban services are made available. Given that 7,000 people in Ulaanbaator have applied for permission to build a home in one of the new private housing sites, there is significant pent-up demand for this type of housing.

### **1.11 Effective Demand and Affordability**

In the past year or so, inflation has eroded the average family's purchasing power. A few people (e.g. traders) have profited from the opening of the economic system and, accordingly, have incomes sufficient to purchase costly housing; but in general incomes have not kept up with inflation. The average family's ability to acquire a new home is therefore in jeopardy. For example city officials estimated that a new private home of two stories, with four or five rooms, might sell for as much as Tg 1 million today. This compares with a price of only Tg 15,000 for the same home in 1990. Given that the monthly salary of a fairly senior level government employee is Tg 2,200, or Tg 26,400 yearly, a standard home would cost 38 times annual income, far in excess of the general U.S. normative ratio of 3:1.

Moreover, the currently high interest rates have a negative impact on affordability. Assuming a loan of Tg 500,000 for 15 years, at a 55 percent interest rate, the monthly payment would be Tg 7,000, more than three times the government salary, as indicated above. This scenario suggests that there will be little effective demand for housing until prices stabilize.

### **1.12 Relationship between Housing Supply and Demand**

For the foreseeable future, the supply of housing will continue to lag behind housing demand. Given current economic constraints, neither the government nor the formal private sector will be able to satisfy demand (only 163 apartments were completed in Ulaanbaator in the first six months of 1992). Furthermore, the inability of government to expand infrastructure services to new housing developments is expected to further constrain housing activity. As a result, the ger boroughs may be expected to accommodate most new urban growth.

### **1.13 The Nature of Housing Deficits**

The housing deficit consists principally of a lack of sufficient formally built housing. While the government attempted to provide all households with a State sponsored apartment unit, it was unable to do so. It did, however, succeed in providing a sizable minority of the urban population with formal housing, but the entire rural population, about 50 percent of the population of Ulaanbaator, and an even higher percentage of families in other cities and towns reside in gers and in wooden housing. The dwelling unit deficit is therefore one of quality as well as quantity. In addition, since only State sponsored apartments have full access to urban services, the deficit may also be characterized in these terms as well.

## **2 Guidelines for a Private Housing Delivery System**

In a market economy, a private sector housing delivery system is predicated on matching housing supply to demand in accordance with consumer preferences and affordability. In this respect, both land and housing are allocated not by government fiat, but in response to market forces and price signals.

In order for any private delivery system to work effectively, a number of elements must be in place. First and foremost is the need for a housing and land policy which encourages all public and private parties to make a positive contribution to the development of housing. Such a policy must be prepared by the government in concert with the private sector. In addition, planning and development controls must exist, not to hinder development but to ensure that development takes place in such a way as to foster maximum economic development, to ensure efficient urban service delivery, and to minimize impacts on the environment. In the housing sector, such controls consist of planning and zoning; subdivision guidelines and permits; building permits; and environmental approvals. It is also necessary that specific types of information be made available to all parties, such as cadastral data, which show clear ownership of property; assessment and revenue data; socio-economic data; and land and housing demand and supply data. Finally, a full range of public services must be available and funded through adequate cost recovery and revenue generating systems.

Most of the elements listed above are public sector functions though they may be contracted out to the private sector. Just as important are private sector functions. In market economies, the provision of land is a private activity. However in centrally planned economies, including Mongolia, all land was formerly owned by government. Therefore, until private land markets evolve, the government must allocate land, preferably on a for-sale basis but always on a valuation system that reflects market values. This is not yet the case in Mongolia.

A second major private sector function is the provision of capital needed for the development of land, infrastructure, and dwelling units. Usually, financing for off-site infrastructure improvements is provided through general revenues or municipal bonds. On-site infrastructure is generally financed through a construction loan package provided by commercial banks or by other lenders to developers. Housing developers also access commercial short-term loans for dwelling unit construction. The developer recovers these costs through dwelling unit sales to the homebuyer. The homebuyer is able to purchase a home because of access to long-term mortgage loans provided by commercial banks.

Another principal function of the private sector in housing is the production and distribution of building materials and supplies. This is usually the first private function to evolve in a liberalized economy.

Lastly, a number of specialized intermediaries such as the insurance industry must be developed and fostered. The most important of these is the housing and land developer. In a market-oriented housing sector, the developer is at the center of the entire land and development process. The developer orchestrates the acquisition of land, obtains financing and

necessary development permits, plans the site layout, designs and builds, and sells the housing to homebuyers at his own risk. Since the developer cannot himself carry out all these functions, he calls on the services of companies and individuals who specialize in areas such as site planning, architecture and engineering, marketing and sales, construction, and so on. The developer's role is central to a well-functioning private sector housing market.

## **2.1 Context for a Private Sector Delivery System**

The Government of Mongolia needs to develop a housing policy to encourage the private provision of housing. At the same time, it should recognize that the conversion of the housing sector from a centrally planned and implemented system to a market based system must evolve over several years. It will be a difficult process because of current economic constraints. While some steps can be taken immediately, others cannot. The government must prepare a conversion plan which lays out in detail the steps needed to facilitate this process and how and when they should occur.

The Government of Mongolia should now begin to take those actions that lay the groundwork for converting the housing delivery system. Some positive steps have been undertaken, such as the privatization of the city design departments. Other steps should be postponed; for example, until the government devises and implements a program to finance infrastructure services in private housing schemes and formulate an appropriate land valuation process, it should suspend the allocation of lots.

Over the next twelve months the following efforts are recommended:

- a. Formulate a housing policy and a conversion plan to guide the private provision of housing.
- b. Design an infrastructure finance and cost recovery scheme for installing infrastructure services at the sites designated to accommodate new housing development. This would essentially consist of preparing an infrastructure needs and cost analysis for each site and a cost recovery and affordability plan.
- c. Privatize those government services which are normally considered within the purview of the private sector. For example:
  - Architectural and Engineering Services (now underway)
  - Construction Companies
  - Building Materials Companies
- d. Since a shortage of building materials is hampering the construction industry, the government should design a program of incentives to foster the creation of new companies to manufacture building materials, especially those that are currently imported.

- e. Prepare the necessary regulatory and control mechanisms for the development of private sector housing, including:
  - Planning guidelines for the development of land by private sector companies.
  - Minimum standards for infrastructure, including provisions for incremental improvements.
  - A land registration system (now in an embryonic stage).
  - A land valuation system based on appraisals.
- f. Public authorities and emerging private developers should be exposed to the principles of private land and housing markets, public/private roles, and other training to help them prepare for their future development roles.

## **2.2 A Private Sector Delivery System**

The Government of Mongolia needs to fully articulate its vision of an appropriate private sector housing delivery system. The following outline provides a basis for consideration.

### **Municipal Subdivisions**

- a. The potential beneficiaries of municipal lot transfers and sales need to be defined.
- b. Families who acquire a lot in these schemes must be screened to insure that housing construction will occur within a specified and enforced period of time.
- c. The government must decide whether it chooses to temporarily place restrictions on the resale of these plots.

### **Land Policy**

- a. Clear guidelines and appropriate standards for residential development must be defined. Zoning and development standards for private housing schemes and ger boroughs should be elaborated.
- b. The Government should sell residentially-zoned sites at fair market value after necessary appraisals.
- c. Only land that can be serviced should be sold.
- d. The Government should sell unserviced land (land without infrastructure within its boundaries) to developers who are legally required to introduce infrastructure according to set standards before resale.
  - The developer should agree to install the infrastructure on the site at those standards set by the government.
  - Only tracts of land with three or more buildable sites should be sold to developers; developers will be responsible for elaborating a subdivision plan, installing required

urban services, and marketing and sale of lots without government interference. However, the government may specify in what reasonable period the land should be developed and sold.

- All land developers must be licensed by Government or be able to demonstrate that they have the necessary qualifications and financial resources to undertake the proposed development.

e. All land transactions should be legally recorded and registered.

**NOTE:** Municipalities may continue to serve as developers until private sector developers fully emerge. However, municipalities should set a target date to disengage themselves from this activity.

### **Design Standards**

The following standards are based on general international practices and are subject to review by Mongolian authorities.

- In accordance with residential zoning, the developer will provide for an appropriate mix of lot sizes and dwelling unit standards to allow for different family needs and incomes.
- The minimum lot size will be no less than 80 square meters (approximate), while no lot will exceed 600 square meters (approximate).
- The layout should generally conform to the following land uses:
  - Saleable land (residential, commercial, small industry) 50% minimum
  - Non-saleable (roads, sidewalks, parks, paths, etc) 15% minimum  
25% maximum
  - Community facilities and open space 5% minimum  
15% maximum
- The minimum density of the developed sites will be 10 plots per hectare for single family detached units, 15 units per hectare for row or attached housing, and 30 units for mid-rise housing up to 5 stories.
- All units must contain no less than 25 square meters initially, with options for expansion to at least 45 square meters when completed. They must also contain provisions for indoor sanitation and cooking facilities.

### **Construction**

- In cases where the developer is responsible for making site improvements, all construction will be undertaken by private sector construction companies under contract to the developer. In cases where a household purchases a lot without improvements, it may contract with a private contractor or may undertake construction of the unit itself (i.e., self help construction).

- b. The construction of housing, whether by a contractor or a household, must follow the building standards set forth by the government.
- c. Building permits are required of all construction projects. It is the responsibility of the person(s) or company(s) undertaking any of the construction functions to obtain necessary building permits. Occupancy of the unit is permitted only after the unit is inspected and the city issues an Occupancy Permit.
- d. The city will issue special permits to allow the construction of a unit on an incremental basis. This approach will allow low income families to gain quicker access to housing.
- e. All contractors participating in building housing on government-sold land must be duly licensed by the government.

### **Price Considerations**

Prior to purchasing public land, the developer will submit to the government a pro-forma cost sheet indicating the total cost of the planned development, including the price of the land as quoted by the government, the total infrastructure cost and the anticipated dwelling unit construction cost (if the latter is contemplated). The pro-forma document should also include all legal, organizational, design and marketing costs.

The developer will then quote the anticipated sale price for each of the lots or units to be developed on the site. The sale price will include a profit mark-up. The government would reserve the right to approve the proposed sale price and require the developer to sell the lots or houses at this predetermined price—unless he is able to demonstrate that a cost component has changed due to forces beyond his control. He may then request a price adjustment, which may also be approved by the government.

### **3 Training Plans**

A five day training workshop is proposed in November 1992 on private sector shelter development and land and housing markets. These training programs have been previously tested with positive results in similar countries. A brief outline of the topics to be included in the training workshop is presented below:

- a. **The Structure and Function of Private Land and Housing Markets Versus a Centrally Planned Approach to Housing Delivery.**  
This session will raise key issues and show functional differences between centrally planned and market oriented housing delivery systems.
- b. **Eliminating Obstacles to an Efficient Land and Housing Market.**  
This session will highlight those obstacles which must be removed in establishing efficient land and housing markets: excessive administrative procedures, inappropriate standards, etc.

c. **The Characteristics of a Private Versus Public Housing Developer.**

This session will outline the necessary characteristics of a private developer and illustrate why the public sector is ill suited to be a developer.

d. **Shelter Delivery: Public and Private Roles in a Market Economy.**

This session will define necessary roles for the public and private sector in land and housing development and show why they are complementary.

e. **Guidelines for Conducting Land and Housing Market Analyses.**

A step-by-step procedure for conducting land and housing market analyses will be introduced. This procedure will later be used in the context of a workshop exercise.

f. **Guidelines for the Identification of Target Groups and Target Group Shelter Preferences.**

Procedures for defining consumer preferences and target groups for shelter programming will be explained. They will later be used in the context of a workshop exercise.

g. **Guidelines for Site Selection**

Procedures for site selection (e.g. access to infrastructure, employment, soil conditions, topography, etc.) will be examined in the context of a workshop exercise.

h. **Guidelines for Product Development and Pre-feasibility Studies: Weighing Standards, Costs, and Affordability.**

Participants, in a workshop exercise, will examine the interrelationships of all land and housing development costs and their attendant impacts upon affordability. Analytical tools will be provided which may be used by the participants in the future.

i. **Case Study: Private Land and Housing Development Scheme.**

Participants will conduct a 1½ day case study exercise to design a feasible municipal/private sector development scheme. On the basis of pre-collected data for Ulaanbaator, they will:

- Outline a specific market study
- Identify a given target group
- Select an appropriate site
- Conceive a preliminary shelter product and estimate associated costs
- Conduct a pre-feasibility, affordability analysis
- Reexamine product to suit target group
- Prepare an implementation plan, marketing and sales plan, and project cash-flow

**Seminar Requirements:**

- a. **Housing Market Specialist - 20 days**  
**Project Development Specialist - 15 days**  
**Training design specialist - 3 days**
- b. **Seminar Facility: university facility**
- c. **Training design, using adult learning approach: working groups to digest/debate each session, role playing, case study exercises**
- d. **Data collection: data tables, under guidance of Housing Market Specialist, to be prepared by Municipality of Ulaanbaator and Ministry of Construction and Urban Planning.**

**Urban Plan: showing land uses, employment centers, transportation routes and services, and areas served by infrastructure and other facilities.**

**Plan showing availability of sites which could be developed. Also map showing topographic and soil features and land costs.**

**Households: Income levels, savings, household size, dwelling unit, and employment characteristics for 0-19, 20-39, 40-59, 60-79, 80-100 percentiles of income distribution.**

**Existing housing stock: Unit sizes, costs, densities, locations.**

- e. **Participants: 20-25 persons from Ulaanbaator and other cities. Should include both public and private parties in housing policy, development and construction, planning, finance, and infrastructure provision.**
- f. **Logistics: Two interpreters, seminar room, 5 square tables, overhead projector, slide projector, screen, 2 flip chart stands, wall space to hang data in flip chart form, photocopy machine or mimeograph machine, reams of paper.**

**Future training:**

**a. Construction Management and Techniques Workshop**

**Construction management problems relating to the time value of money, poor construction techniques, and quality control were common in Mongolia and other centrally planned housing delivery systems. This workshop for public and private developers will introduce management concepts and tools to improve the efficiency and quality of shelter construction. Workshop themes will include:**

**Construction Management**

- Housing development cycle/process
- Cost Estimating
- Scheduling
- Procurement procedures and negotiation
- Job-site management; progress appraisals
- Quality control and inspection
- Crew organization and monitoring
- Worker safety
- Material handling
- Cost tracking

**Construction Techniques**

- Concrete structural frame construction
- Poured-in-place concrete technology
- Improved ceramic block materials
- Use of interior studs and drywall construction
- Concrete post-and-beam construction
- Energy efficiency
- Modern exterior finishes

(Approximately 2.5 person months of a construction management specialist and a housing specialist is required)

**b. Housing Finance Workshop**

- Concepts of mortgage lending
- Resource mobilization and management
- Appraising property and land values
- Competitive bidding
- Estimating and calculating costs
- Affordability and financial feasibility
- Banker-borrower relations
- The housing development cycle

(Approximately 2 person months of an appraisals specialist and housing finance expert are required)

**4 Future Technical Assistance Requirements**

- a. Assistance in the elaboration of a housing and land policy to guide private housing provision; preparation of an action plan to govern conversion to private sector housing delivery system.

The Government requires assistance to articulate policies and action plans to guide its entry into a private sector housing delivery system. Without them, there is a serious risk

that inefficiencies will occur. (Approximately 4 person months of TA is required of land and housing policy specialists.)

- b. Assistance in the elaboration a housing mortgage law, a planning law, and land use/property law.

At the present time Mongolia lacks a legal foundation in these areas. Thus, government action is subject to objection. Mortgage based lending instruments, planning and development controls, and land transactions are critical elements for encouraging and regulating private housing markets. (Approximately 3 person months of TA is required of a lawyer/planner.)

- c. Assistance in the development of revised land use standards, site development standards, and building regulations.

Standards and building regulations are currently based on the former Soviet model and outdated approaches to construction. These need to be revised to reflect probable and practical shelter solutions in the Mongolian context. (Approximately 2 person-months of TA is required of a physical planner.)

- d. Assistance in the development of revised procedures for implementing development control mechanisms.

Related to the above is the need for rules and regulations needed to implement planning and land laws. (Approximately 2 person months of TA is required of a planner and lawyer.)

- e. Assistance in the development of a computerized land registration system and identification of geographical and land information systems (GIS/LIS) requirements.

The City of Ulaanbaator's land registration section has started the laborious manual process of surveying and recording plots for private ownership. Since a market-oriented economy depends heavily on a viable land registration system, developing a comprehensive land registry is a critical activity. The Land Section intends to computerize this operation, but it lacks the necessary technical expertise to design a cost effective approach using appropriate hardware and software. Technical assistance would include conducting a needs assessment, preparing a pre-feasibility analysis, developing specifications for procurement, and conducting a training plan. (Approximately 2 person months of TA is required of a GIS/LIS specialist.)

- f. Assistance in the development of a pilot private housing development scheme including basic infrastructure services and a financing plan.

Municipal land development schemes for private individual housing risk failure due to a lack of financing for infrastructure services. A pilot study should be conducted to examine one such scheme in detail. The goal would be to develop a workable technical and financial framework which would permit the needed infrastructure to be financed. (Approximately 2 person months of TA from a housing and finance specialist are required.)

- g. Assistance in the elaboration of a strategy articulating the interrelationships between private land development, single family housing, building materials, and related technologies (furnaces, septic tanks, hot water heaters, etc.)

The government's policy is to promote private individual housing. However, the supporting technology for this policy initiative is not in place. A study and workshop would help the government articulate a plan to overcome these obstacles. (Approximately 3 person months of TA from housing and construction technologies specialist are required.)

## ANNEX 1

### HOUSING AND URBAN DEVELOPMENT IN MONGOLIA BACKGROUND: THE NATIONAL CONTEXT

#### Geographic and Economic Characteristics

Mongolia is the fifth largest country in Asia, about the size of Iran or western Europe. It has a population of about two million inhabitants; its low density is equivalent to that of Mauritania. The country is landlocked, bordered on the north by Russia and on the south by China. Geographically, the country is made up of mountains ranging from 1,500-3,000 meters (40 percent), hilly areas with altitudes ranging from 1,000-1,500 meters (40 percent), and plains (15 percent); the average altitude is 1,580 meters. Earthquakes and strong wind storms are common in certain parts of the country.

Mongolia's diverse geography causes it to have climatic divisions including very cold, cold, temperate warm, and warm. The climate also ranges from humid to arid and dry. Mongolia has a high degree of sunshine per annum—higher than any other place in the northern hemisphere.

While Mongolia's trading links were formerly almost exclusively with the former Soviet Union via rail and road, Mongolia now increasingly relies on new linkages with China and the port of Tianjin for its new ties to the outside world.

Under the former centrally planned economy, collectivization of livestock and expansion of State cooperatives occurred between 1948-1960; from 1961-1985, planning emphasis shifted to the development of an industrial economy. As a result, agriculture received considerably less investment. From the early 1960s, significant investment was made in the construction industry (housing and education), which benefitted Ulaanbaator, Erdenet (an expanding mining center), and other urban centers.

Despite investments on the order of 20 percent of national capital investment over 1970-1985, much of it within Ulaanbaator, housing production has considerably lagged behind demand. This has resulted in the proliferation of informal or ger housing in all major settlements.

Mongolia began economic reforms in 1986. These reforms have included: increases in the autonomy of State enterprises, price liberalization and the promotion of private cooperatives, elimination of State trading monopolies, freeing of retail prices, and more recently the establishment of commercial banks and foreign exchange auctions, currency devaluation, and reduction in the subsidies for imported goods and enterprises. Furthermore, the new constitution provides for private ownership of land, property, and enterprises.

Mongolia has also begun reforms in the privatization of agriculture, commerce, industry, and housing. Yet it is still in transition between a command economy and a market economy. For example, farmers supplying food to Ulaanbaator from neighboring provinces are under attack by provincial authorities who are short on their own food supply. The farmers still occupy State land and can be removed if they do not meet provincial requirements.

Ever since Mongolia opted for political change and a market oriented economy in 1990, it has been struggling to find economic equilibrium. For example, Mongolia no longer receives credits and project assistance from its trading partners in the former Soviet Union, and must now purchase increasingly important spare parts, petroleum, and other necessities with hard currency, which is in very short supply. As a result, GDP was expected to decline by 10 percent in 1990/1991, and the balance of payments deficit was expected to be around US\$200 million due to import requirements for food, raw materials, and equipment. Furthermore, in the construction sector alone, about 42,000 jobs were perceived as redundant in 1990.

Mongolia has potential for increased hydrocarbon and mineral resource production. It has important mineral reserves, including copper and several other ores; in addition, petroleum exploration concessions have recently been negotiated. Agriculture and animal husbandry, and related light industry, continue to be the economy's mainstay.

Forty percent of the work force is employed in agriculture and 25 percent is employed in industry, transport, administrative, and service sectors. About 86 percent of women are fully employed.

With respect to finances, according to the IMF, total revenues amounted to Tg 5.8 billion in 1990, of which about 58 percent were derived from local governments. Expenditures totaled 7.3 billion, of which 48 percent was for local government. Of the total expenditures, about 14 percent was for wages and salaries.

### **Transport and Communications**

Only about 3 percent or 1,300 kilometers of the road network in Mongolia is paved, and 7 percent is graveled. The rest is made up of tracks across open steppe lands. Roads account for 73 percent of freight transport and 45 percent of passenger movements. Ulaanbaator is the principal traffic generating point, with paved roads to Russia in the north, Darkhan and to Urhangay in the west. The road linking the second and third largest settlements (Darkhan and Erdenet) is not paved.

The Mongolian railroad is operated as a joint venture with the Soviet Union. It is the second most prevalent form of transport. Coal makes up about 47 percent of its freight cargo. It is also the principal network for exports via the Trans-Mongolia Railway running from Beijing to Irkutsk.

Mongolia International Air Transport (MIAT) is responsible for domestic and international air transport. Ulaanbaator is served from Moscow and Beijing. Flights serve all eighteen provincial centers.

Mongolia has satellite linkages using Russian, British, and Japanese earth stations. Mongolia has also increased local communications capacity recently. However, facsimiles are still largely unknown and telex services are limited.

The Ministry of Energy is responsible for managing electrical power and fuel supply and for the operation of the central heating distribution system. Industry consumes about ninety percent of the electricity which is generated. The lack of spare parts and other factors have caused regular power outages. An energy audit, leading to an energy master plan, was planned for 1992.

### **Population Growth and Socio-Economic Characteristics**

Mongolia had a national population of 2.15 million in 1990 with a natural population growth rate of 2.62 percent. The country is expected to have a population on the order of 2.6 million by the year 2000. In the past, Mongolia had a population growth policy due to fears of domination by its neighbors and its perceived need for greater human resources to bring about its economic development. As a result, Mongolia has one of the youngest populations in the world: 42 percent of the population is less than 14 years of age. Family planning reforms only began in the late 1980s.

Mongolia is 52 percent urbanized. Ulaanbaator, the capital, had a population of 575,000 in 1990, but is now expected to have a population on the order of 600,000. It had a population growth rate of 4.5 percent per annum between 1960 and 1990 and now represents almost 30 percent of the national population. The majority of this growth is due to migration from the rural areas to the south and southwest. The other key settlements are much smaller in size: In 1990, Darkhan and Erdenet had populations of 88,600 and 58,200, respectively.

Mongolia's social and economic development programs have shown progress. According to UN statistical indicators:

- GNP per capita is \$550; roughly equivalent to Bolivia.
- Adult literacy: 91 percent; roughly equivalent to Thailand.
- Under 5 mortality rate: 87/1000 births; better than Turkey.
- Life expectancy: 62.5 years; better than Botswana.
- Female years of schooling versus males: 90 percent versus the Korean Democratic Republic's 63 percent.

While the study team was unable to obtain specific data on Ulaanbaator, statistics there are no doubt considerably better than the country as a whole.

### **Ministry of Construction and Urban Planning (MCUP)**

The Ministry (formerly Commission) of Construction and Urban Planning has a broad supervisory and regulatory mandate in urban development. Its functions are:

- The promotion of research and information in the fields of building design, construction technology and materials development, and physical planning
- The formulation and application of national physical planning and urbanization strategies
- The development and promotion of building design, civic design, and urban land use and engineering infrastructure standards
- The provision of technical, legal, and administrative advice to government in the areas of its mandate
- The development and regulation of pricing policies for construction and civil engineering investments and operation and maintenance programs.

The Ministry is currently developing a planning and housing law to regulate development and has requested assistance in this regard.

### **Urban Development Administration and Planning**

Ulaanbaator, Darkhan and Erdenet are classified as City Territories and have the status of Provinces. In addition to these areas, urban places also include all provincial (aimag) centers, and 31 other centers based on the level of services they provide. Generally, population in these service centers may be as low as 2,500. The city territories and provincial centers have a considerable degree of operational and financial authority.

### ***Ulaanbaator: Background***

Ulaanbaator became a permanent settlement in 1778. By 1923, when it became known by its current name, the settlement had a population of about 60,000 with private enterprises run by Germans, Americans, Chinese, Japanese, Russian, and British concerns to the east of the current center. Before the liberation movement, the city functioned as a major religious center with a related community of 20,000 and more than 100 temples.

The City of Ulaanbaator had a built-up area of 140 square kilometers in 1989, but comprised a total area of 1,360 square kilometers including a national park, satellite towns, and outlying districts. The satellite towns of Nailekh and Baganur are both coal mining centers located 30 and 130 kilometers, respectively, from Ulaanbaator proper. In 1990, over its entire area, the city had a density on the order of 456 persons per square kilometer, and 3,588 persons per square kilometer in the built-up area.

Ulaanbaator proper is located in the Tuul River valley surrounded by low-lying hills. Development has occurred primarily in a linear fashion on an east-west axis extending about 24 kilometers. In this narrow corridor to the north of "Peace Boulevard" is the government center, the commercial center, and a long strip of State-constructed high-rise housing. To the north of the city are located ger settlements and garden houses. To the South is the national park, where construction and land use changes are vigorously controlled.

<b>City area and population data</b>	
City proper built-up area	140 sq. km.
Contiguous rural areas and the national park	1050 sq. km.
Satellite towns and outlying districts	160 sq. km.
<b>City territory total area</b>	<b>1360 sq. km.</b>
<b>Population (1989)</b>	
Workers' District	58,115
Friendship District	73,524
October District	219,793
Sukhbaatar District	151,020
<b>City proper total</b>	<b>502,452</b>
Baganuur Satellite Town	13,669
Nailekh Satellite Town	22,833
Outlying Districts	9,439
<b>City Territory total</b>	<b>548,393</b>
<b>Density</b>	
City Proper built-up area	3,588 persons/sq. km. 36 persons/hectare
City Territory	456 persons/sq. km.

The total population of Ulaanbaator is expected to rise to 661,000 and 760,000 in the years 1995 and 2000, respectively. The city has been growing at an annual growth rate of 2.8 percent per annum. It had a population of only 431,000 in 1980.

### ***City Administration and Budget***

Ulaanbaator has significant powers to govern, raise revenues and manage its own affairs. Essentially there are two levels of representative local government. The highest level is a city council with deputies elected from among the council members, and a similarly elected Mayor who serves as Chairman of the city's Executive Committee. The mayor shares departmental responsibilities with his four deputies. The second level of local government is comprised of assemblies for each of the city regions and satellite towns.

In 1989, the City of Ulaanbaator was given the additional authority to formulate annual budgets and broaden its revenue base. At this time, there are many instances where demarcations of authority for policy and operations are not clear between central and city government and between city government and district/regional assemblies.

<b>Budget 1991 (Tg Millions)</b>	
Total income	1142.5
Total expenditure	906.8
Transfers to central government	235.7
Share of expenditures	
public sector services	24.0 percent
physical infrastructure	71.4 percent
central management	5.6 percent

**N.B.** According to the team's questionnaire, the city's budget over the past three years was: Tg 749 million (1989); Tg 898.2 million (1990); and Tg 897 million (1991).

#### ***The Department of Urban Planning and Architecture***

The Department of Urban Planning and Architecture consists of three sections: Planning and Architecture, Survey, and Land. In 1991, the Department had a staff of twelve architect/planners, fifteen engineers, two economists, and twenty support personnel. Its functions include the following:

- Town planning and land use inventories
- Planning for housing, water supply/sewage and heating
- Planning for transportation and communications networks and the environment
- Ger district planning and management
- Surveying for infrastructure and housing development
- Development control
- Land registration and pricing in conjunction with the Mediation Board.

The Land (Relations) Section has recently been created. It has a staff of eleven persons including the head of the department, four technicians in charge of each of the four districts, four engineering technicians, a program specialist, and a land valuation person. The Land Section is in charge of maintaining an up-to-date land use plan, mediating land use conflicts, granting the use of land, and land registration. The office is also responsible for development

control and is assisted by an inspector in each of the districts. The inspector reports to the District Chairman.

One of the principal activities of the Land Section is land registration. The office receives at least five to six requests a day to register land (some of which has already been allocated, but for which the owner does not have a certificate). However, the office is able to process only about one to two per day. The certificate includes information on the plot as well as a physical survey of the plot drawn on existing cadastral maps. The certificate includes the following information:

- Approval of planning department; name of grantee; location (city, district, subdistrict); registration number; current owner of property; size of plot; building area; garden area; agricultural area by type; area occupied by roads; area occupied by utility networks.
- Restrictions: 1) May not make any modifications to the plot; 2) Any change must be duly registered; 3) The registration certificate is invalid without the accompanying survey (map).
- Executive Officer (signature); Control Officer (signature).

Each certificate is copied to the central archives; one stays with the land office.

The legal basis for the land department's activities include:

- Resolution of the Council of Ministers No. 136, of April 26, 1991 which establishes payment and valuation of land.
- Resolution No. 85 of March 31, 1988 of the Executive Committee of the Municipal Corporation on land development and control.
- Resolution No. 179 by the Municipal Corporation's Executive Committee, dated June 6, 1991 regarding payment for land development.
- Resolution No. 194 of the Municipal Executive Committee of August 1, 1991, establishing the Office of Land Relations.
- Resolution No. 300 of the Municipal Executive Committee on October 10, 1991 establishing a land registration function.

The Land Section, however, recognizes that the existing legal foundation for land registration and development control is inadequate. It is anxious for a new land law to be enacted. A proposal for such a law is being drafted in a committee to which the Land Section belongs. The new law will govern land development, control, registration, and taxation.

A UNCHS study (March 1992) recommended the establishment of a land information system to assist in the privatization and registration of properties and to map utilities for utility maintenance, cost recovery, and other management functions. The study examined the broad GIS requirements at the national and local level before the Land Relations Section was created. Since then, the Section has been visited by many vendors and other groups (e.g. Canadians, Japanese, etc.) with potential donor funding, but none of this funding has materi-

alized. As a result, there is confusion as to what GIS system would be most appropriate for the Section and if any assistance will be forthcoming.

A good basis for a land registration system exists, since cadastral maps exist at a scale as low as 1:500. These maps could also be used to map utility lines and to help develop planning, maintenance and cost recovery schemes for these services.

### ***The Physical Development Plan***

In the past, the physical plan was elaborated by the City Planning Department in conjunction with the semi-autonomous design units and the former soviet design institutes which served as technical resources. After about six months of work in Ulaanbaator, the plan was finalized in Moscow. The most recent plan was developed in 1986 for a 2010 horizon.

The conventional plan is based on land use zoning with population projections. One of the key objectives of the current plan was to gradually replace informal or ger development, but this policy now seems to have been abandoned. There is no direct linkage between the plan and planned capital outlays, nor is there evidence that alternative strategies for sectoral and spatial development were contemplated. However, maps have been produced which indicate roads and utility networks, as well as suggested environmental protection measures. A plan review is in process which is taking into account anticipated reductions in capital and recurrent expenditures as well as plans for private property ownership and regularization or upgrading of ger areas.

### ***Legal Authority of the Plan***

At the present time, there is no planning and housing law in Mongolia. Formerly, legal authority for the plan was based on a 1980 resolution by the Council of Ministers that was proposed by the former Commission of Construction and Urban Planning. Other legal authority for matters concerned with urban planning include:

- City boundary: Decree # 278 in 1971 by the President of the Great People's Hural; future boundary changes proposed by the city must be approved by Parliament.
- Development permits: Power granted by the City Executive Committee.
- Building construction contracts: 1982 Resolution of the Committee of City Maintenance.
- Development rights: General Planning Resolution of the Council of Ministers # 60, of 1986. Permits the right to receive the first private house free of charge, a loan with subsidized interest, and choice of a building design. The occupant may cede the property right to heirs, sell the house, and expand the house on the land.

## ANNEX 2

### MUNICIPAL SERVICES IN ULAANBAATOR

The parties responsible for urban services in Ulaanbaator include:

- Trest for District Maintenance (urban roads, storm water, and solid waste)
- Water and Sanitation Authority
- Heating Authority
- Electrical Authority
- Communications Authority
- Public Education Authority
- Health Department

All municipal authorities are responsible for the planning, implementation, and cost recovery of their services. Descriptions of those services for which information was obtained include the following.

#### Roads and Transport

Outside of the ger areas, urban roads are paved and developed according to the standards noted below. The roads are reasonably well maintained by the Trest District Maintenance Authority. There are about 320 kilometers of paved road in the city. In ger areas and new private development sites, roads are laid out but remain unpaved due to a lack of resources.

Both bus services and electric trolley buses ply the routes of Ulaanbaator. There are about 133 kilometers of bus and trolley lines operated by the City Transport Authority. Most households depend on this service since the vast majority do not own private cars. As a result, over 180 million passenger trips are logged per year. The cost is Tg 0.5 per trip.

#### Water Supply

There are four key water resources for supplying water to the city involving 134 wells. The best quality water is provided by a source near Nailekh which is 80 kilometers from the city. This used to be the chief source for drinking water, but the city must rely on sources within the city proper as well. Water drawn from the east of center is of better quality than that to the west (toward the industrial zone). All water is treated by chlorine at the treatment plant and is regularly tested. System losses are estimated at 8 percent of the total, but between 12.5 and 15 percent may be unaccounted for.

About 40 percent of the water is used for industrial purposes. Less high quality water for this use is drawn from wells in proximity to the industrial zone and is provided to industry untreated.

The combined water resources capacity is 246,000 cubic meters per day, of which 170,000 cubic meters per day is currently used. As reserves are diminishing, a reassessment of reserves is planned. There are differing opinions as to how long existing reserves will satisfy Ulaanbaator's needs, but according to the city engineer, they will satisfy the city's needs until 1995.

For future water requirements, the city would like to build an artificial lake to the east of Ulaanbaator. However, this proposal has not yet been approved because of political opposition.

Metering has not been introduced and is probably not feasible for most of the formal housing stock. Water is not supplied to the apartments by a single pipeline; different pipes serve the bath, kitchen, cold and hot water, etc.

In the 1950s the planning standard for water supply was 150 liters per capita per day. However, between 250-270 liters per capita per day is currently used in the formal housing stock. Households are charged Tg 5 per person per day for water and an additional Tg 1.60 per person per day for hot water.

Ger settlements are served by about 250 reservoirs in the form of enclosed tanks with 5 ton capacity. The planning standard is only 10 liters per capita per day, but actual consumption may be higher. Distribution is made on the basis of coupons whereby Tg 10 per 1,000 liters is charged. This is the common rate for community water supply throughout the country.

### **Sewerage**

About 50 percent of the city's population is served by a piped sewerage system. There is a single sewage treatment plant located to the west, near the industrial zone, fed by a gravity system. The plant has a capacity of 230,000 cubic meters per day compared to an estimated waste water load of 170,000 cubic meters per day. Because the plant is functioning below capacity, the city expects the plant to serve the city's needs until the year 2000.

Based on a UNCHS field visit in mid 1991, the treatment plant did not appear to be in full operation and the quality of effluent seemed unsuitable for discharge into the river. UNCHS also noted that several industries had their own on-site treatment with effluent being discharged into the river.

The City Engineer claims that about 93 percent of the effluent from the treatment plant is clean. He also indicated that all industries must discharge their effluent to the treatment plant and that some industries are required to pre-treat it. He noted that the Committee for the Protection of the Environment tests the effluent at least once per year. If the Committee's standards are not met, the treatment plant is required to pay a heavy fine. He also noted that no serious environmental impacts from the plant have been observed.

In the ger settlements pit latrines are used for human waste disposal. These are emptied by the city in the winter months when the sludge and fluids are frozen and more easily extracted.

### **Heating**

Formal housing is served by several district heat exchange stations fed by the thermal power stations. The stations serve two purposes: heating water and heating homes. According to the City Engineer, formal public housing is heated by the district exchanges, but some of the more recently constructed buildings have boilers for heating water. The heat exchanges for homes were designed to keep homes at 18 degrees Celsius with an outside temperature of -39 degrees Celsius. However, this cannot be achieved because of a lack of capacity in the power stations.

All ger areas use solid fuel for cooking and heating. According to the UNCHS and the City Engineer, pollution from burning coal from all heating sources is extremely bad in the winter. Good quality coal from the Nailekh mine to the east of Ulaanbaator has been all but exhausted, and an inferior coal from another mine now has to be used. Formal housing uses electricity for cooking purposes. Since Mongolia does not have natural gas and petroleum, technical solutions for the use of coal are being investigated.

### **Energy**

While power transmission is not a problem in Ulaanbaator, power generation is extremely constrained. There are four power plants in the city and one is not operational. Furthermore, the three operational plants were designed for a capacity of 1,657 gigawatts, but they only generate about 890 gigawatts. This is mainly due to poor technology, the poor quality of available coal, and inadequately trained staff. Some assistance to upgrade the facilities has been recently provided by the Asian Development Bank, USAID, and Japan, but major problems remain to be resolved. Households are charged Tg 0.5 per kwh for service.

### **Drainage and Flood Control**

The floods of 1967 and 1982 demonstrated the need for improved drainage for storm water emanating from the flood plains to the north of the city. The 1967 flood caused numerous deaths and severe damage to infrastructure and buildings. Since then, the city has constructed an embankment system on the two river systems through the center of the city to prevent overflows, and it has improved southern drainage networks as well.

In 1991 the UNCHS team felt, however, that the industrial zone and planned new private development areas may still be prone to flooding. It also noted that secondary storm water drains may be blocked by solid waste and silting.

According to the UNCHS team, responsibility for planning, design, and implementation of storm water drainage programs was fragmented between the City Planning Department and the Engineering Design Institute. However, it appears that the Trest for the Maintenance of Districts is responsible for these functions.

**Solid Waste Management**

The city has an excellent collection system for solid waste which is complemented by good management and maintenance in the State housing schemes. According to the UNCHS, however, open incineration at the three disposal sites is uncontrolled and results in severe air pollution. UNCHS notes that financing is being sought for an enclosed incineration facility and expansion of the key dumping site. The municipality notes that it is looking into various alternatives.

## ANNEX 3

### DEVELOPMENT STANDARDS

The following service standards include those compiled by the UNCHS in its August 1991 report. Those identified by the PADCO team are noted with an asterisk.

#### Education - enrollment

kindergarten	34,200
7 - 17 years	110,000
vocational and higher education	36,700

#### Health

Hospital beds per 10,000 persons	150
Physicians per 10,000 persons	51
Auxiliary medics per 10,000 persons	114
Pharmacy (per 10-20,000 persons)	1 *

#### Community Services

Commercial space per 1,000 persons	
Food stores	60 m <sup>2</sup> *
Consumer goods	25 m <sup>2</sup> *
Hairdressers	25 m <sup>2</sup> *
Student places per 1,000 persons	
Primary School	200 places *
(Max. distance from home	750 meters) *
Kindergarten and Nursery	120 places *
(Max. distance from home	450 meters) *
Public toilet (per 1000 persons)	1 *
Public telephone (per 40,000 persons)	1 *
Library (25,000 books/1,000 persons)	1 *
Fire truck (5,000 persons)	1 *
Community bath (per 1000 persons)	5 places *
Cinema (per 1000 persons)	25 seats *
Cultural Center (per 1,000 persons)	15 seats *
Post Office (per 10-20,000 persons)	1 *
Housing Office (per 12,000 persons)	1 *
Police/Security/District Office	unknown
Parks and gardens (total in boundary)	421 ha. actual

**Roads:\***

Primary	R.O.W.	60 meter
	Roadway	15 m
Primary link road (trucks)	R.O.W.	45 m
	Roadway	11.5 m
Secondary	District Road I	
	R.O.W.	30 m
	Roadway	9 m
District	Road II	
	R.O.W.	25 m
	Roadway	7.5 m
Tertiary		
I.	R.O.W.	12 m
	Roadway	6 m
II.	R.O.W.	7.5 + 9 m
	Roadway	3.5 m
III.	R.O.W. (above 5 stories)	6 m
	Roadway	3.5 m
IV.	R.O.W and Roadway	3.5 m

**Housing**

Single Family Housing		
Density (households/hectare)		15 *
Plot size (20x25)		500 m <sup>2</sup> (varies)*
Dwelling unit size (10x9)		90 m <sup>2</sup> (varies)*
Multi-Family Housing		
Nine story (households/ha)		180 *
Number of rooms (excl. kitchen/bath)		3 *
Dwelling unit size		40 m <sup>2</sup> *

**Transport**

Personal vehicles	est 6,000
Paved roads	320 kms.
Trolley bus lines	45 kms.*
Taxis	< 50

**Infrastructure**

Water consumption per day	200,000 cu. m.
Water supply capacity per day	246,000 cu. m.
Industrial share of water consumption	40 percent
Sewage treatment plant capacity per day	230,000 cu. m.
Solid waste collection per day	400 tons
Power plant capacity	890 gigawatts *

Land development standards for schools, education, etc. are established on the basis of population density not on an area basis. A land use distribution for the entire geographic area of Ulaanbaator follows.

**Land Use Distribution  
Ulaanbaator**

Settled Area	Green Zone around Industrial Park
Community Services	Drainage Facilities
Green spaces/Sport Facilities	Racetrack - horses
Main Roads and Streets	Racetrack - automobiles
Industry	Railroad easement
Warehouses	Airport
Treatment Plant	Cemeteries
Administration/Technical Institutes	Quarries
Universities of Higher Education	Vegetable fields
Special Uses:	Unoccupied areas
Botanical Gardens	Barren Areas
Exhibition Grounds	Flood protection/flood plains
Nurseries	Industrial warehouses
Common Service Areas of Special Purpose	Land for urban expansion
Landscaped Park	Other land
Festival Ground	Land under development

## ANNEX 4

### UNCHS RECOMMENDATIONS

The UNCHS Housing Study contained a list of recommendations for the housing sector. These recommendations are listed here for information purposes as well as to provide a better idea of the magnitude and nature of the sector's needs in Mongolia.

1. Strengthen settlement-based decentralization including the promotion of community-level capacity to participate in the development process; encourage local resource mobilization, small scale project design/implementation, and maintenance and financial management.
2. Promote a network of autonomous NGOs trained to provide support and advice to community-based organizations and to act as intermediaries with all tiers of government.
3. Clarify the roles and relationships of central and local government under new political arrangements; provide for special responsibilities at the ministerial level for local government affairs.
4. Train and retrain parties involved in housing and urban development addressing professional, vocational, and management course and curricula revisions in order to better prepare them for market-oriented roles in the public and private sectors.
5. Prepare a construction enterprise strategy to guide the geographical location of units, size and specialization.
6. Reorganize and decentralize technical design units to enable their transition into private consulting services.
7. Establish autonomous national professional associations and registration (e.g. of architects and engineers) to regulate and represent the professions.

#### **Policies and Legislation**

8. Formulate a policy framework for the transformation of urban land to private ownership in accordance with the amended Land Act addressing provisions for development control, land valuation, government power to benefit from inflated land prices, condominium title, and the general issue of freehold versus leasehold tenure.
9. Formulate policy frameworks for the privatization and valuation of existing housing stock, full private ownership of ger areas, the establishment of private housing finance organizations with emphasis on community based credit unions, and private housing cooperatives/associations.

10. Prepare legislation and regulations or by-laws determining the powers of local government with respect to building codes, construction permits, inspections, and demolition of illegal structures, together with the development of codes embodying performance specifications as opposed to predetermined physical designs and standards.
11. Formulate environmental protection policies and supporting legislation linked to land use provisions, under development control powers related to land transfer, and to construction and quality and effluent control.
12. Launch education campaigns and disaster management legislation and procedures with special reference to earthquakes.
13. Prepare policy measures addressing revenue raising powers of local government with respect to broadening the local tax base to include property taxation, municipal bonds, and authority to seek domestic and international capital loans.

#### **Information Systems**

14. Participate in international human settlements information networks, initially with Asian information centers and construction technology and management data.
15. Develop social and economic survey capabilities with the central statistics institution, central policy and regulatory departments, and local government with an emphasis on user requirements, dwelling unit occupancies, household income-consumption-expenditure, market research, and demand for municipal services.
16. Expand the scope of the household section of the national census, improve diversity and dissemination, and introduce inter-census sample surveys.
17. Establish a national land ownership registration and survey system embodied in land legislation, including cadastral mapping within a decentralized records network linked to the current program for decentralized public documentation archives.
18. Introduce ortho-photo mapping and establish a settlement-based computerized geographic information system.
19. Expand and modernize seismic recording stations with improved linkages to international measurement systems.

#### **Settlement Planning and Management**

20. Conduct a review of physical planning, incorporate economic and social inputs, formulate a national urbanization policy, and prepare demand analyses for physical development.

21. Introduce planning methodologies which incorporate community participation, public/private roles, market research, and implementation based on financial and economic appraisal techniques.
22. Improve programming and budgeting throughout all urban centers for both capital and operations and maintenance expenditures based on accurate costing of municipal services and phased introduction of direct and or indirect cost recovery for urban services.
23. Prepare a comprehensive strategy within the proposed land and housing privatization policies for integrated upgrading of urban ger areas throughout the country, building on current provisional proposals but addressing capital financing, cost recovery mechanisms, plot privatization, land value regulation and plot transfer controls, water and sanitation, and public health impacts.
24. Expand water supply and sanitation upgrading generally, including lower cost decentralized small bore sewerage schemes at the ger borough level.
25. Initiate recycling of treated waste water for industry and irrigation and composting of solid waste as part of a national strategy for urban environmental control.
26. Conduct surveys and mapping of summer homes used by urban residents and reassess needs for alternative land use.
27. Conduct a housing needs/effective demand and supply assessment taking into account the contribution that upgraded ger dwellings can make.

**ANNEX 5**

**INVENTORY OF PUBLIC AND PRIVATE DEVELOPERS**

The City of Ulaanbaator was unable to provide information relative to the individual capacities of the following developers. It is generally understood that the private developers generally only have the capacity to build 5-6 dwelling units over a two year period (equal to the building season).

**Public Developers**

- 1) Military Building Unit #021
- 2) " " " #022
- 3) " " " #158
- 4) } Military Building Unit #0119
- 5) } Sections I, II, III
- 6) }
- 7) Bayanzurh Co.
- 8) Barculamj Co.
- 9) Ulaanbaator Co.
- 10) Baganur Corp.

**Private Developers**

- 1) Altan Urga Co.
- 2) Bilgun Co.
- 3) Barilgachin Co.
- 4) Ingeo Co.
- 5) Batzam Co.
- 6) Barhu Co.
- 7) Tohjilt Co.
- 8) Ord Co.
- 9) Urga Co.
- 10) Herlen Co.
- 11) Odon Co.
- 12) Chandmana Co.
- 13) Tsutghal Co.
- 14) Bargilt Co.
- 15) Monbar Co.
- 16) Bayangol Co.
- 17) Hurim Co.
- 18) Balj Co.

## ANNEX 6

### THE MONGOLIAN TECHNICAL UNIVERSITY

The Mongolian Technical University (MTU) provides university level and technical training in engineering, architecture, and the sciences and is the only school of its kind in the country. It is organized into ten departments:

- Civil Engineering, including architecture and city planning
- Geology and Mining
- Electrical Engineering and Energy
- Mechanical Engineering
- Technology (non-university level)
- Continuing Education and Management
- General Science
- Communications
- Management Information Systems and Engineering
- Faculty in Darkhan (a branch with various disciplines)

MTU's new administration, which took office in June 1992, is currently reevaluating its curriculum. The university officials are of the opinion that the school does not achieve the standards of universities in the West. To achieve these standards would require a complete revamping of the school's organization, including reorganizing the university on a Bachelors, Masters, and PhD granting basis. The University's Rector stated that he wanted to introduce new courses of study which would help the students gain those skills necessary to work in a market-oriented economy. He was not knowledgeable about what kind of courses he would introduce. In this respect, he would be quite open to making contacts with US universities, professors and administrators who could provide him with advice and assistance. He would also be enthusiastic about cooperating with international lending agencies in all kinds of training courses.

The rector is:

Dr. Altangerel Dagvyn  
Mongolian Technical University  
P.O. Box 46/520  
Ulaanbaator-46, Mongolia

Tel: 24709 or 25109

## **ANNEX 7**

### **LIST OF CONTACTS**

1. Tserendash Damiran, Minister of Construction and Urban Development
2. Tserendembereliin Baasajav, Deputy Mayor, City of Ulaanbaator
3. Yo. Gerelchuluun, Secretary, State Commission for Privatization
4. Nyamjav Zaankhuu, Engineer, Ministry of Construction and U.D.
5. Buyan, Director , Hot Ail Architectural Company
6. Shugarsuren, Manager, Bureau of Mediation, City of Ulaanbaator
7. Gonchidagviin Naransetseg, Economist, City of Ulaabaatar
8. Adiya Dagvasambu, Architect, city of Ulaanbaator
9. Bathuyagian Batjav, Architect, Ministry of Construction and U.D.
10. Bokhuugin Osorgarav, Accountant, City of Ulaanbaator
11. Dr. Altangerel Dagvyn, Rector, Mongolian Technical University
12. Chook O. Chuluunbat, First Deputy Managing Director, Investment and Technological Innovation Bank
13. Tserendorjin Narantungalag, State Commission for Privatization
14. Norjmoogiin Otgonbayar, City Planning Department, City of Ulaanbaator
15. Zhandalin Narancacralt, Architect, City of Ulaanbaator