Urban Land Management in Afghanistan

Kabul Urban Development

Current city structure, spatial issues, recommendations on urban planning

By Alain Bertaud

April 17, 2005

Kabul - 1 Houses in the informal sector, even when built on steep slopes, are mostly sturdy and well built

Acknowledgement: This report is based on a visit to Kabul with a World Bank team from January 10 to 23, 2005. I want to thanks the many officials of the Government of Afghanistan and the municipality of Kabul who spent time with me during my stay in Kabul. I am particularly grateful to my colleagues from AIMS, UN Habitat and the Emergency Infrastructure Reconstruction Program for generously sharing with me the data they collected.

A. **Summary**

Kabul, with a population evaluated at about 3 million people in 2005 has grown over the last 10 years at an exceptionally fast pace, reaching a rate of demographic growth around 17% per year over several years. The city has grown mostly through the construction of informal settlements, which now shelter about 80% of Kabul population and represent a private investment in fixed capital of US$ 1.3 Billion (not including land value).

Because of limited resources in staff and capital, the Government should concentrate its action in 3 areas:

- Guaranteeing property rights in formal and informal settlements
- Developing a legal framework which would allow the private sector to develop land legally and efficiently
- Invest in infrastructure and social services to serve the existing population.

More specifically:

1. Kabul main problem is not housing but infrastructure and access to legally subdivided land;
2. The current informal housing stock, providing adequate shelter to 80% of the population is here to stay and should be provided with regular tenure, infrastructure and community facilities;
3. Housing types and standards should reflect market demand. The traditional courtyard house design reflects demand and is efficient in terms of land use and subsequent incremental growth. Zoning and regulations should allow the extensive construction of courtyard houses.
4. The existing residential plots can accommodate an additional population of about 300,000 people by building additional rooms, undeveloped areas immediately adjacent to the existing built-up areas can accommodate an additional 1,000,000 people. There is no need at this moment to envisage the construction of new towns.
5. A network of secondary roads improving access to the existing informal network of streets should be built within existing settlements requiring only the widening of a few streets and minimal demolition and relocations.
6. Green open space, easily accessible to the majority of Kabul population can best be provided through linear parks along Kabul's river, rather than on inaccessible rocky steep hillsides.
7. The government should concentrate its limited resources in providing basic infrastructure and community services to the existing population and in providing an orderly legal framework for the development of new land to accommodate population growth;

8. The government does not have the financial and human resources to engage in developing land and/or building houses on a large scale

B. Kabul current urban spatial structure, dominated by informal settlements, is the result of exceptionally rapid demographic growth.

Kabul population is currently evaluated at about 3 million people. The population has grown by about 15% per year between 1999 and 2002. If we exclude the returnees from the growth calculation, the population has still grown by a staggering 13% per year over the same period. While the rate of demographic growth is likely to slow down in the future because of the improving stability of the country, it is likely to stay at around 5% (about 3% natural growth plus 2% migration) for some years to come. This "reduced" growth rate will represent a yearly increase of about 150,000 people a year or of about 20,000 households.

The relentless influx of hundred of thousands people every year has shaped Kabul in a particular way and will continue to shape the spatial development of Kabul many years in the future. No municipality in the world faced years after years with such a large number of poor migrants would have managed to organize the delivery of land, housing and services in an orderly manner. In Kabul, the informal development of land and housing was the most effective way of quickly delivering the sturdy shelters which are necessary to survive Kabul's winter. Not surprisingly, land developed informally represents about 70% of all residential areas and provides shelter to about 80% of the population of Kabul.[1] The total capital value of the informal housing stock of Kabul in 2004 (not including land) is valued around US$ 1. 3 Billion (see detailed calculation in Annex 1).

During the last 20 years, because of the enormous rate of migration, there was no realistic alternative to letting migrants develop land informally. The only alternative would have consisted in sheltering migrants in temporary refugees camp until the government would have had time and resources to develop land formally. If the government had adopted this "orderly" solution, the country would have lost the US$ 1.3 billion value contributed by the migrants building their own houses in Kabul alone. Refugees living in temporary camps do not contribute to capital formation; their labor potential is usually wasted.

Given the extraordinary rapid rate of demographic growth and the extreme hardship and destruction caused by war and political upheaval in the last 20 years, it is remarkable that most households have been able to find access to land and to build mostly solid and well-designed houses. Many cities of the world growing at a rate lower than Kabul have usually been faced with rapid expansion of large shantytowns made of

[1] The population and land use estimates contained in this report are derived from a preliminary study of the Ikonos satellite image of Kabul taken in 2004. The details of this study, in particular the detailed housing typology are presented in Annex 1.

temporary materials and extreme unsanitary conditions. In Kabul, by contrast, while the majority of informal neighborhoods completely lack even basic infrastructure, the houses themselves are made of durable materials providing adequate and permanent shelter to their inhabitants.

Only a small portion of Kabul population could not find shelter through the construction of shelter made of permanent materials. The population living in tents is estimated at 10,000 people or about 4,000 households. An additional 5,000 people is thought to be living in the ruins of destroyed buildings. Given the extraordinary number of people who have been migrating to Kabul over the years, and taking into account the past political instability of the country, it is remarkable that only about 0.5% of the population be currently living in temporarily shelter. While the informal land development process have been often messy, the overall outcome is certainly positive if one considers that the only possible alternative to informal land development would have been for migrants to live in temporary shelters in refugee camps waiting for the government's orderly resettlement plans to materialize. The advantage of the informal land delivery system has been its ability to distribute land quickly to households who were then able to convert their own labor into capital by building sturdy houses. Because the labor of recent migrants have very little opportunity cost, the informal land development process has been a boon to the Afghan economy. This is in large part due to the exceptional skill of Afghan rural migrants in building sturdy houses out of local materials.

While many in government deplore that the expansion of the city has been made outside any legal or regulatory framework, it is nevertheless true that the ad hoc informal development of the city has prevented a worse disaster in the form of homeless families roaming the streets of Kabul having to be sheltered in temporary refugees camps. The construction of permanent houses built mostly by laborers who had no alternative employment opportunities has contributed to the growth of fixed capital in the city and constitute an important asset rather than a liability. While some individuals illegally profited from the informal expansion of the city by selling land which didn't belong to them, the households who purchased land from them should not be penalized as they had no alternative for shelter and many probably purchased land in good faith. The final outcome of the informal settlement development process of Kabul has been at the end largely positive.

The informal system of developing land is not without drawbacks: first, property rights have been often violated, second, the informal process, in most cases, do not allow enough land for roads, infrastructure or community facilities. The task of the government in the years to come is to remedy a posteriori to the problems created by the informal land development process by (i) legalizing the titles of households who built houses, eventually compensating some land owners, and (ii) developing infrastructure in informal areas. Simultaneously, the government should allow a fast and efficient development process for new land for the 150, 000 new migrants expected every year (although quite a number of them could find accommodation in the areas already developed, as we will see below). The current "waiting list" system for land, in its present form, does not seem to provide a satisfactory answer to the demand for land and shelter.

The new land development process should not only be orderly but it should be fast and affordable to new migrants. Such a system will have to rely on market forces and

let the private sector take a leading role. The role of government in providing land and shelter should be restricted to small and well defined target groups like destitute households, invalids and other social cases. This is not an ideological bias, there are no credible alternatives to letting the private sector develop land on a large scale – formally this time rather than informally as it did in the past. Could anybody argue that the planning office of the Municipal government or the ministry of Housing and Planning have sufficient skilled staff and budget to allocate land in a timely manner to about 20,000 households a year, while at the same time developing infrastructure in the neighborhoods that are lacking it?

The role of the government in the new formal land development process is important. In areas close to the existing built-up areas, where there is obvious demand for new plots, the municipal government should design and mark on the ground a grid of primary and secondary roads at about 400 meters distance from each others. This new network will branch on the existing primary road network. The grid network should take into account topography and, when possible, property boundaries in agricultural areas where boundary lines are visible and well known. The most important task is to mark the right of way boundaries of the road network on the ground and publicize it. There is no need to acquire the land. The process should be considered a simplified form of land readjustment scheme. The development of new plots within the grid should follow the current process, i.e. plot size and street pattern and width should result from the interaction of neighbors and informal developers. Government action and control should be concentrated in preventing the primary and secondary grid network from being encroached. Eventually, after a sufficient number of plots have been delimited and built, the municipal government could envisage leveling and even surfacing the roads of the grid, with or without financial contribution from the households being served.

This approach to land development contrasts with the current approach consisting in concentrating the entire effort of the government on the detailed design and development of small areas of land that can cater to a small fraction of the annual demand. While the government develops its own land development schemes, the informal sector is developing large tracts of land without any guidance for the provision of primary and secondary right of ways, which will be crucial in providing an infrastructure network in the future.

In defining an urban strategy for Kabul it is important to consider informal settlements as legitimate, and to deal with their shortcomings, rather than trying to turn back the clock and try to rebuild the city according to obsolete and utopian concepts. Government officials have to accept that migrants are here to stay, that their houses are an asset, and that many more migrants are going to come in the future, and the city should be able to distribute land and services in a more orderly manner than has been the case in the past.

Many Government officials faced with the problems created by large migration wish that somehow migration could be discouraged to provide some “breathing time” to develop plans to allow a more orderly development. Kabul government officials should take into account the experience of many cities in Asia and Latin America that had to face large influx of migrants in the past. Initially, many of these cities tried to develop policies focused on discouraging migration rather than on facilitating the orderly settlements of large number of new migrants. India, for instance, had a policy of

investing in "backward areas" to prevent migration toward cities. India is now trying to find cheaper ways to develop land to accommodate its migrant population coming from rural areas. The historical record shows that trying to discourage migration by demolishing informal housing, by withholding formal property rights or by depriving new informal settlements from elementary services, is not only ineffective at slowing down migration, but significantly contributes to create large permanent slums with intractable environmental and social problems.

Therefore, the best policy is to confront the reality of rapid demographic growth by concentrating scarce government resources in investments where they will be the most effective in integrating rapidly the influx of migrants into a productive urban workforce. Experience of other countries has shown that allowing new migrants to have elementary property rights and access to basic infrastructure service does not accelerate migration. Migration is largely an exogenous phenomenon, there is not much that the government can do to stop it or slow it down. While in the short run, migration toward cities causes growing pains to municipalities, in the long run, the wealth of a city is proportional to its number of inhabitants, with larger cities producing a larger share of the national wealth per inhabitant than smaller cities. This, in the long run, will also be true in Afghanistan.

Before discussing more in detail a plan of action for the development of Kabul, it is necessary to review in detail the opportunities and the problems inherent to the informal developments that dominate Kabul land use. In the following section, I will therefore analyze the peculiarities of the informal settlements and the resulting spatial structure of Kabul. In a later section, I will describe the component of a land development strategy that would take into account the specificity of the situation in Kabul.

1. Opportunities and liabilities in Informal residential settlements

The map of Figure 1 shows the extent of informal settlements in Kabul. Beyond the formal and informal categories, the residential housing stock of Kabul has been divided into 5 types depending on the dwelling design: Apartments, townhouses, detached houses, courtyard houses and houses built on slopes. The distribution of land and population among the housing types is shown on Table 1.

Kabul - Distribution of the Housing Stock by Type (2004)

Total	Residential Land Use	Area (km2)	Population	% Area	% Population	Average density (p/ha)
	Formal	32.66	531,000	31%	18%	163
	Informal	71.56	2,442,000	69%	82%	341
	Total residential areas *	**104.22**	**2,973,000**	**100%**	**100%**	285
	Of which:					
Formal						
	Apartments	1.80	91,000	1.7%	3.1%	505
	Townhouses	0.17	5,000	0.2%	0.2%	293
	Detached houses	30.69	435,000	29.5%	14.6%	142
Informal						
	Detached houses	3.33	88,000	3.2%	3.0%	264
	Courtyard houses	57.96	1,980,000	55.6%	66.6%	342
	Houses on slopes	10.26	375,000	9.8%	12.6%	365

** It is estimated that an additional population of about 60,000 people live in non residential areas + 10,000 living in tents settlements and 5,000 in destroyed buildings. This will give a total population slightly above 3 millions for Kabul in 2004 .*

source: Interpretation of Ikonos 2004

Table 1: Kabul - Distribution of the Housing stock by type

Informal residential settlements can be found in all parts of the city, but they are more heavily concentrated in the South West part. The typology shows that courtyard design is dominant in the informal sector while detached houses is the most common form of housing in the formal sector. Apartments and townhouses, with a little more than 3% of the population, constitute a very small part of the housing stock.

The population living in informal houses built on steep slopes represents about 12% of the total residential population, however most of this population is strategically located close from the city center and from the major employment zones.

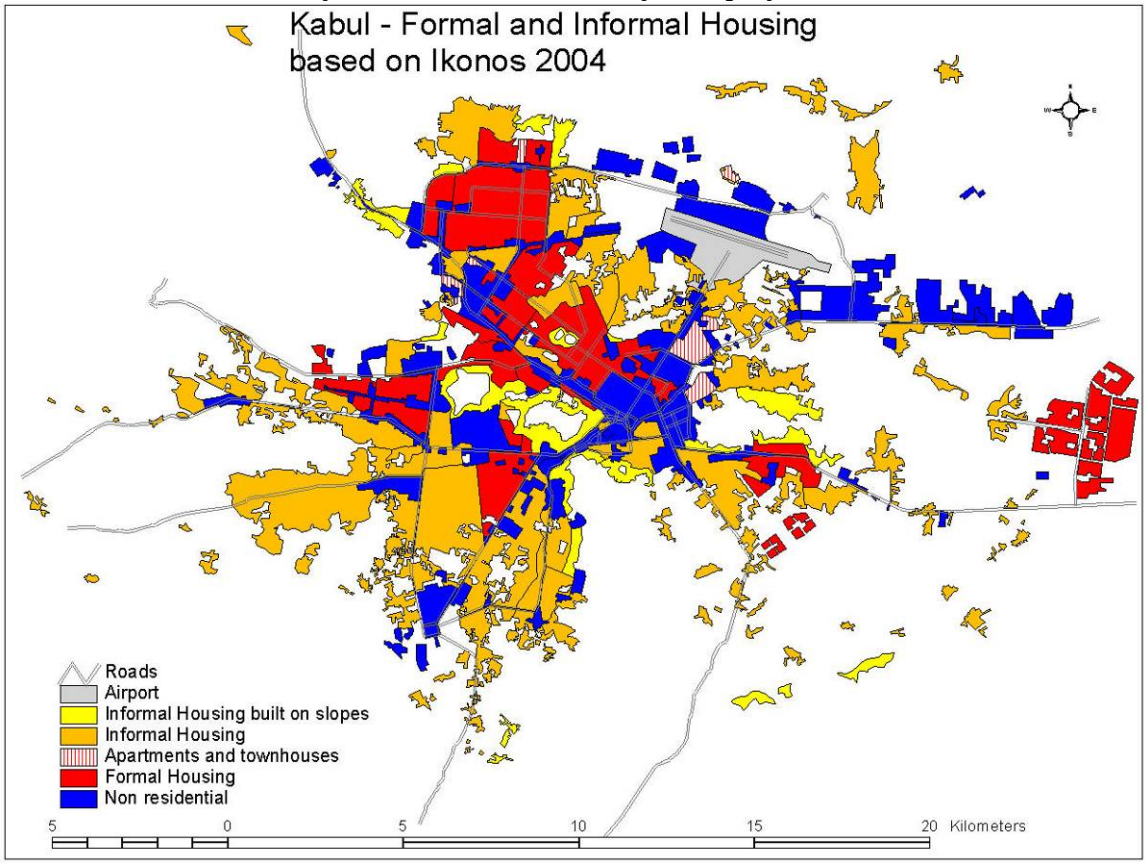

Figure 1: Kabul – Map of Formal and informal residential settlements

Figure 2: Example of Informal settlement developed on agricultural land

Plot sizes, plot coverage and densities in informal settlements

Plots in informal settlements are not very different from plots in formal settlements. On the segment of satellite image shown on Figure 2 we can see, on the left, few blocks of formal detached houses and on the rest of the image the typical informal courtyard houses most common in informal settlements. Because the settlement shown on Figure 2 is not fully densified, we can see the process of development: plots boundaries are following agricultural field boundaries, so do streets. This suggests that in this case, land has been purchased from farmers with mutual agreement between buyer and seller.

The plot size in the courtyard houses varies from 200 to 350 m2, built areas vary from 25 to 65% of plot area, which allow – in the case of a single story house – floor space from 50 to 225 m2 per house. In the future, when some second floor would have been built, the floor space per informal house could reach 400 m2. The courtyard design, typical of the informal houses of Kabul allow a high plot coverage while keeping good standards of light an ventilation (see below section on land use regulation). The number of houses per hectare varies between 20 and 28, therefore denser than the formal detached houses which in most schemes do not go above 22 house per ha.

Plot sizes in informal settlements are not smaller than in formal settlements and in many cases are larger (this is a peculiarity of Kabul informal settlements, in most other cities of the world informal plots are typically much smaller than formal plots.). Surveys (UN Habitat) are indicating on average about 2.2 households per plot in informal settlements with an average household size of 7.5 persons. This figures are coming from ad hoc surveys not necessarily representative of the whole universe of the informal housing in Kabul. However, in the absence of better data we have to assume that these

figures are close to reality. If these figures are considered accurate, then the average density in a fully built informal settlement could reach 400 people per hectare.

Street pattern and road width

As seen on Figure 1, most roads in informal settlements are very narrow, from 4 to 6 m wide, which is enough to get a vehicle through on an emergency or to give access to a few plots, but not enough for normal vehicular traffic to flow through neighborhoods. The major problem is not so much the narrow streets but the lack of street hierarchy. There is no network of primary and secondary streets. Large informal settlements like the one shown on Figure 2 are viable if vehicular traffic is kept at a very low level within each settlement and if vehicles do not use the street as parking. Refuse disposal would require a community system where solid waste is collected by the community and brought to collection points located on the primary or secondary road network where it can be collected by municipal trucks.

The provision of water, sewer and storm drainage should not be very difficult in existing settlement as the streets, while narrow are well marked and mostly straight. The UN Habitat upgrading project already under way should provide realistic unit costs.

Space for community facilities

The informal development process do not normally leave any space for community facilities like schools, clinics, police stations etc. Those would have to be provided, either by acquiring already developed plots, or by locating in still vacant adjacent areas.

Informal settlements built on slopes

Informal settlements built on slopes are different from the settlements shown on Figure 2. Many houses have no vehicular access and plots on the steeper slopes are smaller. However, settlements built on slopes are much smaller in area and are usually linear, i.e. they are usually not very far from vehicular access. The provision of water and sewer on the steeper slopes would prove to be initially costly. It is probable that an upgrading policy should be developed with lower standards – for instance a public tap for , say, 20 households – in order to keep down upgrading costs. However, informal settlements on slopes constitute an important part of the housing stock of Kabul, they provide cheap housing at a walking distance from most center of employment. The difficulty of access and the lower standards of infrastructure would guarantee low rent in the future. These settlements would be ideal for recent migrants who have few resources and whose priority is to find employment.

It has been argued that the hills on which many of the informal settlements are built should be reserved for a green belt to be used for the recreation of the people of Kabul. Steep rocky hills are not well suited for tree planting nor for recreation (although some trees have indeed already been planted around the crest of Kohi Asamayi Hill). Rather than developing green areas on hills which are difficult to plant and difficult to access, it would be better to develop the banks of the 3 rivers which are crossing Kabul. Presently, Kabul river banks are being used as a dumping ground. The redevelopment of the embankments of Kabul rivers could provide about 180 ha of linear park within easy walking distance of a large part of Kabul population.

Linear parks are the most efficient, in terms of land use, accessibility, security and maintenance. There are many examples of urban linear parks, from the city of Chandigarh in India to the bunds of Lahore and Shanghai and including even Washington DC's Rock Creek Park.

.

Summary assessment of informal settlements in Kabul

While the informal settlements of Kabul present some difficulties for vehicular traffic, they constitute an important and valuable part of the housing stock. These settlements should be upgraded with time with water supply, sewers, storm drainage and refuse disposal. Eventually, as part of a second stage of upgrading , a network of secondary streets from 8 to 12 m wide would have to be created following a grid about 800 m wide. The impossibility of having individual car access to each house is not necessarily a liability in a city as dense as Kabul. However, a reliable and efficient public transport system would have to be developed in the future.

2. The spatial structure of Kabul

Kabul has grown in two adjacent valleys separated by a mountain spine as can be seen on Figure 3[2]. The city center (represented by a red dot on Figure 3) is close to the mountain spine separating the 2 valleys. The central hill spine separating the parts of Kabul reinforces the function of the city center, as direct communication between suburbs – without passing though the city center – are made difficult because of the topography. The current chronic traffic jam around the city center is explained by the peculiar topography of Kabul: because of the mountain spine dividing the North East from the South West, the only roads joining the two parts of the city pass through the current city center. Traffic around and in the city center could be reduced in the short run by better traffic management and, in the longer run, by providing alternate routes between the two parts of the city, as suggested in the Action Plan proposed in section C below.

Because of its topography, Kabul is likely to stay dominantly monocentric and to develop around one dominant center, as the current city center is the only location easily accessible from all part of the city. Important sub-centers are unlikely to develop in the future. We will see below the implications of this monocentricity on future land use and transport.

The network of primary roads radiating from the city center is adequate. Fortunately, the growth of informal settlements has not encroached significantly on the right of ways of the network of primary roads linking different parts of the city to the center. The right of way available on most of the primary network is at least 30 meters, sometime more than 50 meters. The only exception is the road giving access to the dense residential areas of District 13 (south west of the city) that has an average right of way of only around 8 meters.

The mountains surrounding Kabul and the central spine limit the spatial expansion of Kabul to the North and West. There is still a large amount of undeveloped land to the East of the city. In the very long run, the only real possibility of expansion

[2] Figure 4 was obtained by superimposing a Landsat 2000 image with a map of the built-up area of Kabul obtained by digitizing an Ikonos satellite image taken in 2004.

for the city is on a plateau to the North of the city, on the other side of the mountain range limiting the current built-up area to the North. But an expansion of the city in this area at this moment would be premature, given the large densification potential and the easy expansion of the existing built-up area.

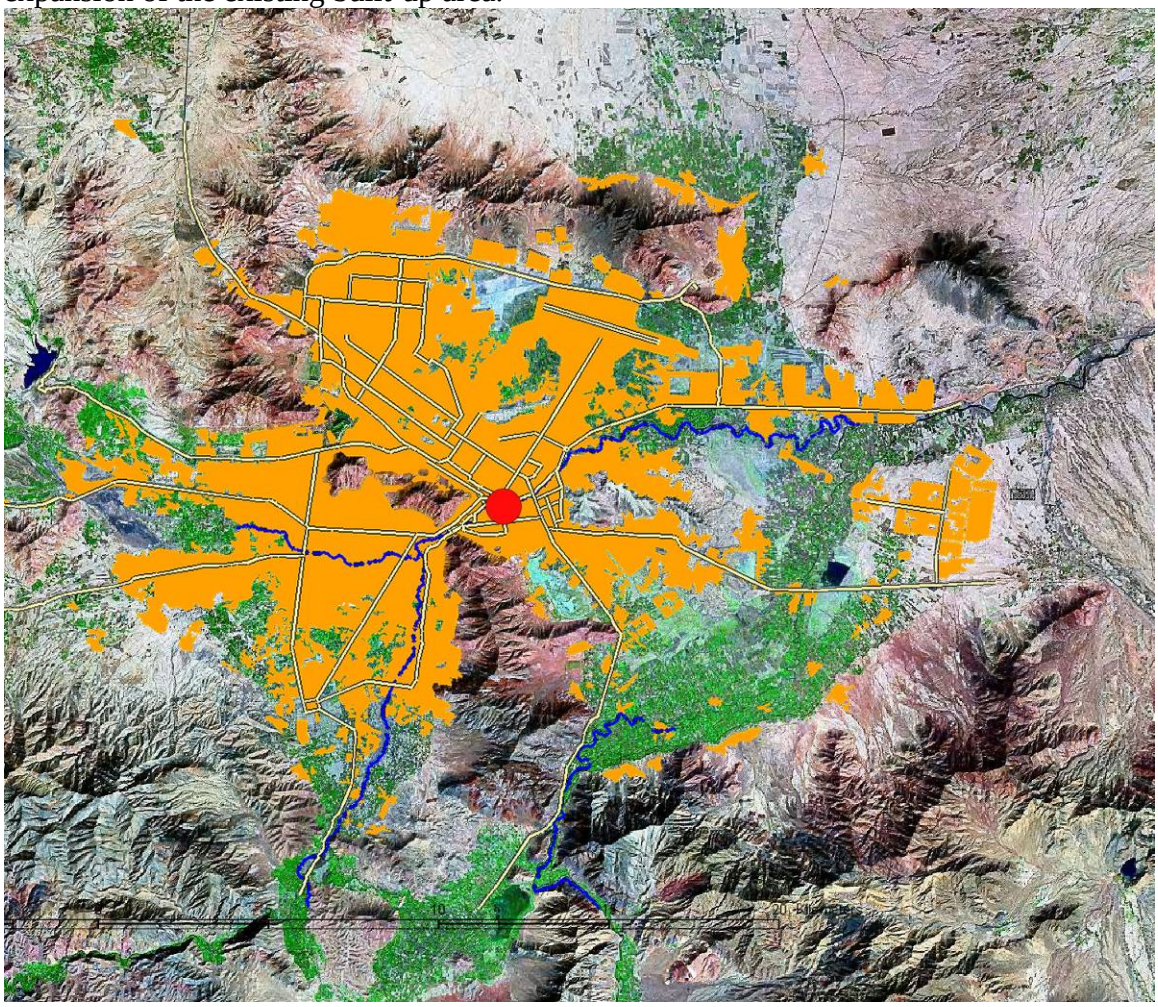

Figure 3: The built-up area of Kabul and the constraints represented by topography

With a built-up area of 140 km2 Kabul has an average built-up density of about 215 p/ha. A high density by world standards but a normal density for a large city of Asia (similar to the density of Bangalore or Hyderabad , see Figure 4)

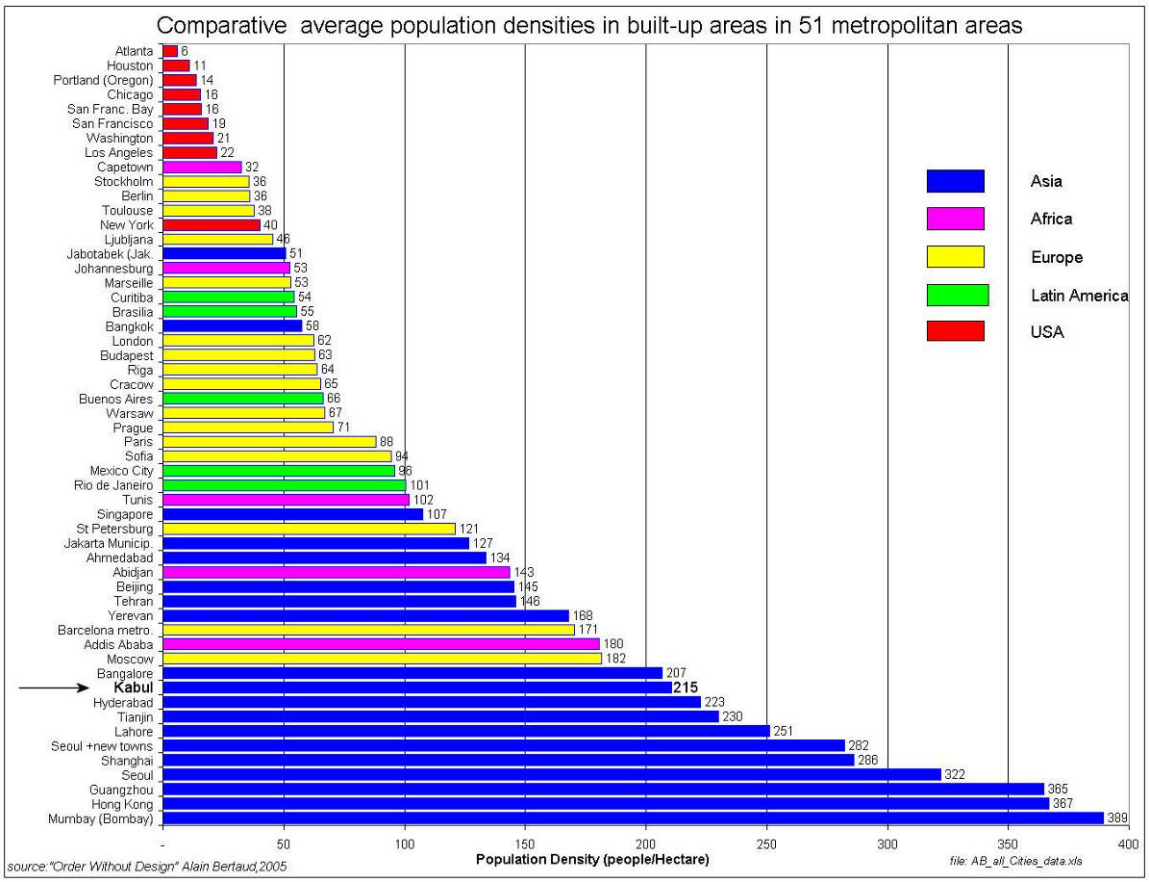

Figure 4: Kabul average built-up density compared to other cities of the world

Population densities in informal areas are higher than in formal areas and most informal areas are farther from the center than formal areas (Figure 5) . As a result the population of Kabul is rather more dispersed (in spite of the high density) than in other cities of Asia with similar built-up densities (dispersion index of 1.13, as compared to 0.99 in Bangalore and 1.03 in Hyderabad[3]) . This dispersion is apparent on the density profile of Kabul (Figure 6) which does not follow the usual negatively sloped exponential profile found in dominantly monocentric cities. The large amount of land used by international institutions and government in the center tend to lower the density of the center and contribute to the dispersion of the population. One of the consequence of high spatial dispersion is to increase the cost of urban transport and of infrastructure.

In spite of the relatively high density, the additional absorption capacity of existing neighborhood, in particular informal neighborhoods, remains high. Many plots in some informal settlements are not yet built, and most plots have only a ground floor where the large size of plots would allow an additional floor. From a preliminary calculation based on the interpretation of Ikonos 2004 it appears that the existing built-up area could accommodate an additional 300,000 population, just by infill of existing vacant plots at current densities (see annex 1 for detailed assumptions and calculation).

[3] The lower the dispersion index, the lower the dispersion, i.e the shorter the average distance per person to the city center controlling for differences in city's built-up area. In other words, the average distance per person to the city center in Kabul is significantly longer than in other cities with a similar built-up area.

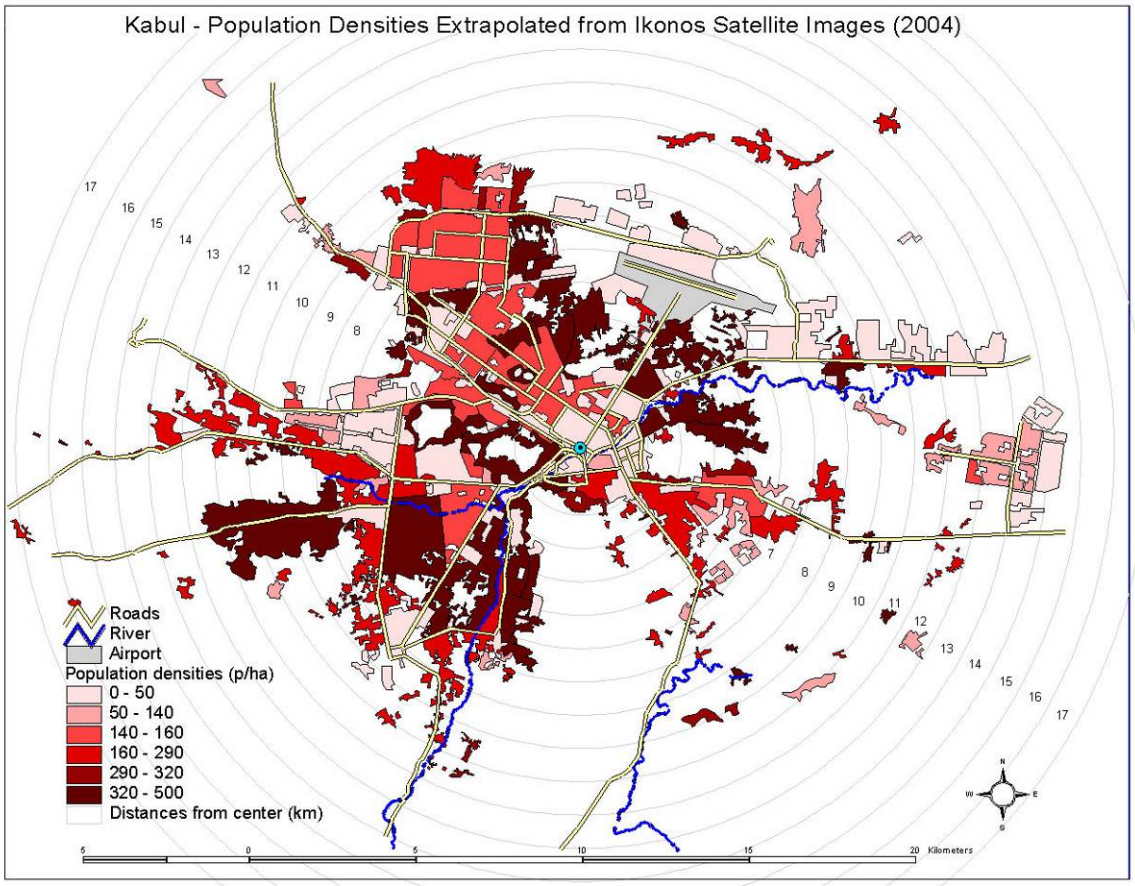

Figure 5: Kabul - Map of population densities

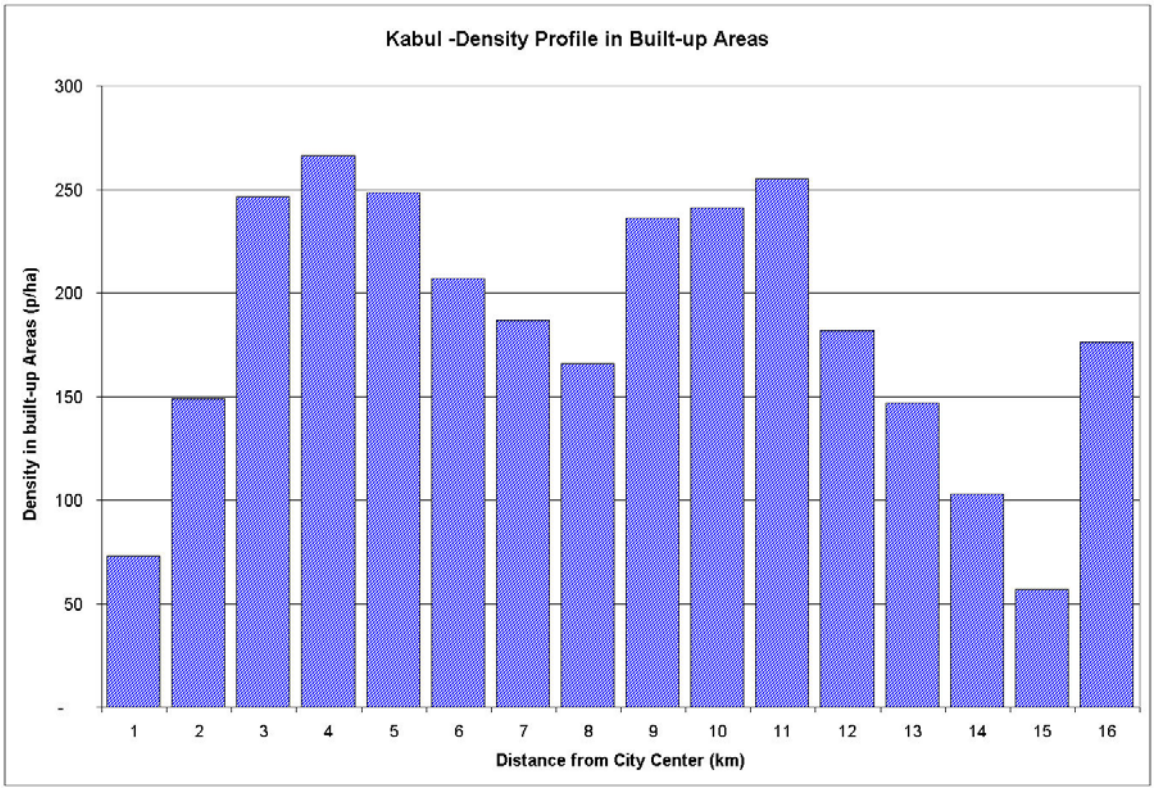

Figure 6: Kabul - Density Profile in built-up areas

3. **The potential and constraints of Kabul's current spatial structure**

Let us summarize the points developed above concerning the spatial structure of Kabul:

- The majority of the population live in informal areas, these informal areas should be considered permanent and should be gradually improved;
- The average density of Kabul is high but "normal" for an Asian city: the current land use is relatively efficient and does not consume more space per inhabitants than other cities of Asia
- Topography is a significant constraint limiting the expansion of the city and dividing the city into 2 parts communicating only through the city center;
- The network of primary roads with an adequate right of way covers most of the city (with the exception of District 13). Linking the North East part of the city with the South Western part will be costly and difficult. Removing the chronic traffic jams in the city center would probably require – in addition of traffic management measures – the creation of a ring road
- Because of the city's topography, Kabul city center is uniquely accessible from the various districts. This unique accessibility of the existing CBD will reinforce with time the monocentric character of the city, making public transport more efficient than private cars. It is therefore important to review land use in the center to make it more efficient and business oriented.

C. **Action Plan of for the development of Kabul**

The preceding sections of this paper have shown the constraints and opportunities facing the development of Kabul. The following section outlines an action plan that take into account the constraints and opportunities of Kabul as they appear in 2005.

The extraordinary demographic growth and local circumstances suggest that Kabul urban strategy should be designed around 3 principles:

- Most of the new housing built by new migrants and the expanding population will have to be self- built, and informal. Infrastructure, therefore, will have to be developed incrementally after most houses have been already built; (there is no point in developing infrastructure in vacant areas when most already built houses have no infrastructure at all) . However the right of ways of a grid of primary and secondary roads in new areas to be developed should be marked and preserved from encroachments;

- The government should concentrate its limited resources in providing basic infrastructure and community services to the existing population and in providing an orderly legal framework for the development of new land to accommodate population growth.
- The government does not have the financial and human resources to engage in developing land and/or building houses on a large scale.

In the context of Kabul, the Government has only 3 tools at its disposal to shape urban development:

- Registration and guarantee of property rights
- Land use regulations
- Investments in infrastructure

1. Defining the role of government in urban development

Why can't the government take a more direct lead in shaping urban development? For instance, why shouldn't the government develop in advance large tracts of land and build large housing projects, or even develop satellite towns?

The Government faces several serious problems when acting as a land developer:

- Timeliness and quantity of land developed: as we have seen, the demand for land is probably around 20,000 plots per year. Responding to demand would require the government to acquire quickly large amount of land, to design and build infrastructure and more importantly to price and allocate plots to households in a timely manner and at a price corresponding to demand. The government – local or central – does not have the flexibility do to rapidly any of these tasks. The political process will interfere constantly in the awarding of contracts, the recruitments of consultants and even more in the allocation and pricing of plots.
- Lack of cash resources: land development requires having access to a steady stream of capital. The uncertainty of budget allocation does not allow government to finance land development on a timely manner, resulting in extended negative cash flows draining budgets without apparent benefits.
- Conflict of interest between the government role as regulator of markets and its role as developer. The government when acting as a land developer is often tempted to act also as a monopolist and to use its regulatory power to prevent competition from the private sector. The outcome is scarcer and more expensive housing. Delhi Development Authority in India is a good example of Government acting as a monopolist land developers, resulting in expensive and scarce housing, hurting the poorest part of the population in the process.

Building satellite towns in new areas might be tempting, as it might seems to constitute a solution to avoid the entangled property rights issues prevalent in the current city. Starting with a blank slate seems to be an attractive solution. The Government should resist this temptation.

Building satellite towns or large land development projects outside the existing urban areas present two main problems:

- Enormous initial capital cost causing negative cash flows to be carried on many years as infrastructure in new areas has to be developed long in advance of actual plot occupation by households, and
- Very large transport cost because of the spatial diseconomy caused by satellite towns which are never self sufficient in terms of jobs and housing.

Projects to build satellite towns or new cities quickly slow down after a few years because of financial shortfalls. In addition, plots sold in new towns require large subsidies to make remote location attractive to buyers. It is hard to justify sinking large capital investments in empty areas while existing population in the built-up areas suffer from inadequate infrastructure. In Kabul, building a separate new town on the Northern plateau would prove extremely costly. Huge investments in infrastructure will have to be made many years before the first inhabitants settle there, while 80% of Kabul already settled population has practically no infrastructure. At the same time, a new primary network of roads will have to be build to link the new city with Kabul. Transport between Kabul and the new city will have to be heavily subsidized to attract households and business.

The experience of these last years has shown that the government has not enough human and financial resources to simultaneously develop land, regulate its use and guarantee property rights. The ever-longer waiting lists for obtaining a plot of land show that the government cannot possibly fulfill the role of developer and regulator at the same time. It is therefore extremely important that the central and local government concentrate their attention and their resources on their core mission consisting in:

- guarantying property rights,
- regulating the use of land, and
- investing in infrastructure.

2. **Developing an urban development strategy**

A urban development strategy for Kabul would consist in 3 main components:

a) Upgrading progressively the infrastructure of existing settlements and legalizing tenure,
b) Developing an adequate primary infrastructure network which would accommodate the growth of Kabul in the future
c) Allowing land to be developed legally in a timely manner to accommodate new households in areas adjacent to the present urbanized area.

The spatial framework of this program will be contained in a new structure plan for Kabul to be prepared jointly by MUDH and the municipality of Kabul. (The detailed terms of reference for the preparation of this plan are provided in annex 2). The major output of this plan will be:

a) A definition of Central and Local Government objectives for urban development in the next 5 years , including a definition of the role of the government and private sector in urban development.
b) Terms of reference for a team of urban planners at the central and local level. This will include constant monitoring of the formal and informal sector building activities and developing indicators on real estate prices;
c) A zoning map showing the land where the city expansion will take place and what uses and standards are expected in each respective areas;
d) A set of land development regulations reflecting (i) market demand, (ii) the housing design traditions of Afghanistan and, (iii) the affordability of various socioeconomic groups;
e) A procedure for providing quickly building permits and land subdivision permits.
f) A program of progressive neighborhood infrastructure upgrading and the role of government, community and private contractors in implementing this program;
g) A program of construction for a primary infrastructure network allowing the projected expansion of the city and the opening of new adjacent areas for development;
h) The demographic and spatial framework for the development of adequate coverage for social facilities.
i) A program for resources mobilization based on user fees, impact fees and eventually property taxes.

The new structure plan of Kabul should promote a new approach to planning. This approach relies heavily on the initiative of the private sector in developing land and building houses and other structures. The role of government should be focused on providing (i) an infrastructure network, which would allow the city to grow in an orderly manner, (ii) community facilities and (iii) the legal framework within which private developers and individual builders-households would operate.

The development of the structure plan will not be a “once in 20 years” effort, but on the contrary will be a continuous and permanent effort to adjust the plan to changing supply and demand situations. The Structure Plan staff should monitor constantly the growth of the city, including the variations in land prices, rents and construction costs, to constantly adjust the plan to meet new demand emerging from changing economic conditions.

D. The need for a new approach to Planning and Regulations

1. Master plans and development plans

Traditional master plans – including the master plan developed for Kabul in 1978 – are based on a detailed design based on the vision of a few experts who cannot possibly have the foreknowledge of future changing economic conditions. For this reasons such plans become rapidly obsolete. By contrast, an analysis of the real city on the ground, including its assets and its liabilities constitutes the starting point of realistic development plans. Development plans propose gradual changes to improve perceived short comings

at a pace consistent with the economic resources of households, private firms and government. For instance, housing policies contained in development plans should be based on demand for different type of housing as they change in time. Development plans should establish a process to monitor real estate prices as signals to increase of decrease the amount and type of housing that is allowed to be built. For instance, determining the area of land to be zoned for flats should not be based on the arbitrary decision of a technocrat in charge of the plan but on the monitoring of rents and sale price of apartments. Market price variations are sending signals to planners and developers that there is a strong demand for a specific type of housing and less for another. This demand driven approach allow different socio-economic income groups to find the type of housing they prefer, rather that the type of housing which is selected in their name by an urban planner.

2. **Zoning**

A zoning plan is a legal document which establishes the type of constructions that can be built in specific parts of the city. Different zones with different characteristics (minimum plot sizes, set backs, floor area ratio, maximum number of floors, etc) accommodate different city functions and different income groups. Land use standards in residential areas should therefore be related to the price of land in various areas, to the cost of construction and to households' income. Too often housing standards are copied from cities where economic conditions are very different. As a consequence, the resulting housing standards are affordable only to a small proportion of the population. The population which cannot afford the minimum standards specified in zoning regulations is forced to build illegally. For this reason, it is essential that the urban planning staff monitor on a permanent basis the evolution of households' income and land and construction prices. Land use standards contained in zoning laws should be closely related to income and land and construction prices. They should in no case be based on arbitrary norms imported from outside the country.

The land use standards specified in zoning plans for residential areas should reflect also cultural values specific to different socioeconomic groups. For instance, in Kabul one can find mainly 3 housing types: flats in walk-up apartments of 5 floors, detached houses built on the middle of the plot, and houses built around a walled compound leaving the center of the plot as an open courtyard. Each type of house corresponds to demand from different socioeconomic group. Zoning regulations, therefore, should be able to allow the three types of houses. It should be recognized that the third type, the house built around a central courtyard is the most efficient in terms of land use and in term of use flexibility. Zoning regulations in areas where this type of housing is allowed should therefore allow building on property boundaries and no set back should be required.

The design of housing reflects consumer preferences; there is no optimum house design. However, some design preferred by consumers make a particularly efficient use of land, while other don't (for instance North American suburbs are notorious for using an excessive amount of land). It happens that the courtyard design selected by about 80% of informal households is particularly land efficient. The sketch of Figure 8 illustrates this point.

On Figure 7, I compare the use of land on 2 identical plots of 390 m2: the first one contains a typical detached house on a plot 15m X 26m typical of formal subdivisions; the second plot type is nearly square (19.5 m X 20 m) and is typical of courtyard houses found in informal subdivisions. The design of the detached house leaves only 2 small front and back courtyards for a ground floor area of 165 m2. By contrast, the courtyard design, shown on the second plot, allows a large courtyard of 10m by 14 m and a much larger built area of 250 m2. An additional advantage of the courtyard house is to be easily subdivided between several households and to be easily upgraded with time.

Land regulations should reflect consumer preferences. It will be therefore essential that the new Kabul land use regulations allow both types of houses. In practical terms, it means that regulations in courtyard areas should not require setbacks from the property line (as it is usual in Europe and the US or, unfortunately, in many other countries, which have imported their model from former colonial powers). Households should be able to built right on the limit of their property, with the requirement that a minimum of , say, 30% of the land be left open, without defining where this opening might be.

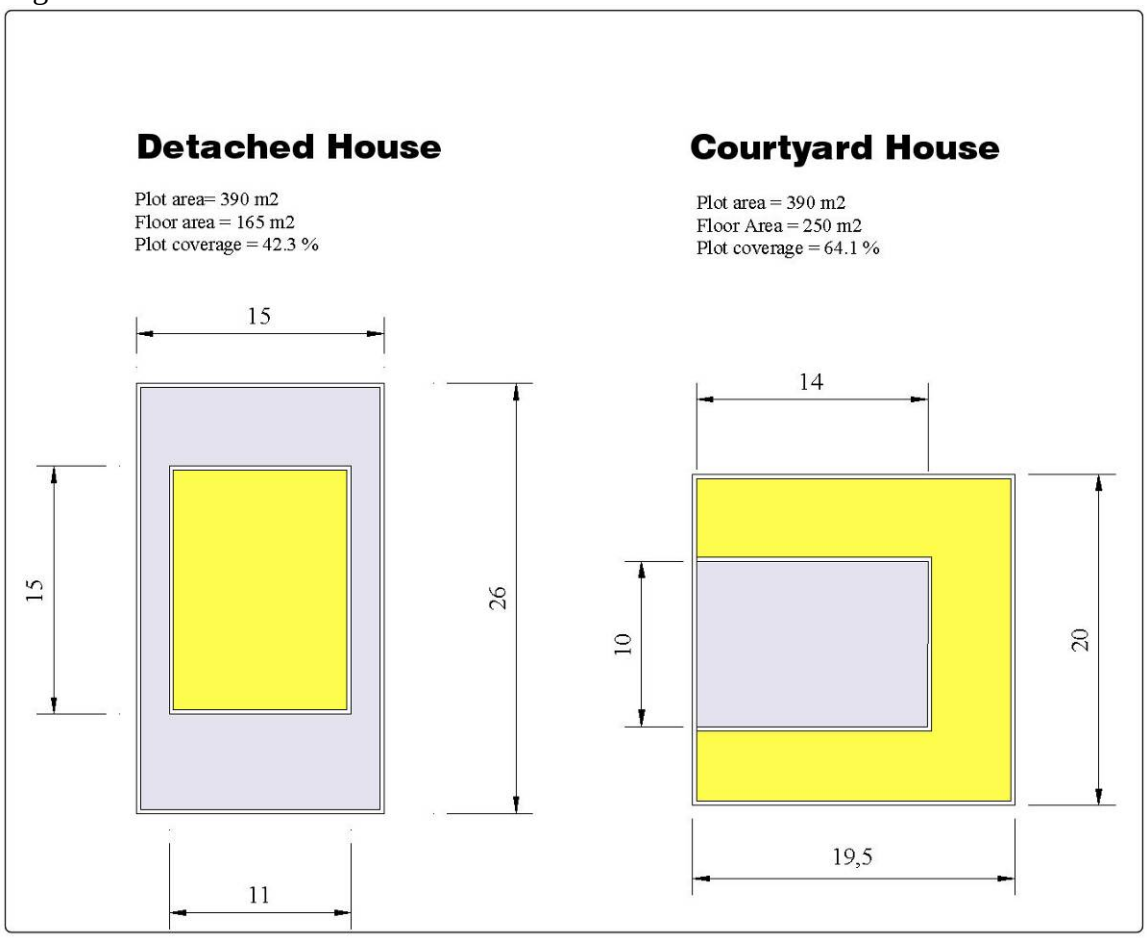

Figure 7: Comparison between the land use efficiency of a Detached house and a courtyard house

3. **Importance of regularizing tenure and resolving land conflicts for the future development of Kabul**

The regularization of tenure and the resolution of conflicting land claims is essential for the efficient use of urban land. Land parcels which cannot be traded because of uncertainty about land titles get by-passed by development and soon constitute enclaves of underused or vacant land, obliging the city to expand infrastructure further than what would have been necessary if the land had been freely traded. In the case of Kabul the uncertainty of tenure of many land parcels and buildings constitutes a major hindrance to the future land use efficiency. It will be essential to allocate sufficient resources in the years to come to solve land conflicts as soon as possible. This would have a major positive impact on the quality and costs of housing produced in the future.

Annex 1 : The housing typology of Kabul extracted from Ikonos 2004 satellite image

Because of the fast growth of Kabul in recent years, and the understandable preoccupation of the municipality with solving day-to-day crisis, there is no detailed land use breakdown for the city, nor detailed population census data. However, using 2 sets of Ikonos satellite images[4] taken in 2002 and 2004, I tried to evaluate for this report a rough estimate of the population of Kabul and its spatial distribution, the distribution of land use between residential and non residential, and finally a residential typology differentiating between formal and informal housing and further differentiating within these two types according to house design and the percentage of plots already occupied on each site. (see Table 2)

Kabul - Land Use and population (2004)

Land Use	Area		Population	Population Density
	Km2	%	People	p/ha
Residential	104.22	74%	2,973,328	**285**
Non residential (Excluding airport)	36.30	26%	54,456	**15**
Total Built-up	140.52	100%	3,027,783	**215**

in addtition, it is estimated that about 10,000 people or 4000 households live in tents

source: derived from Ikonos 2004 image interpretation

Table 2: Kabul – Land use and population

The residential areas occupy about 104 km2 or about 74% of the total built-up area of Kabul. This residential area has been divided into a "tree" typology. The first category concern the type of settlement and is divided into 2 settlement types: formal and informal (see Table 3). Each settlement type is divided among 5 dwelling types (apartments, townhouses, detached dwellings, courtyard dwellings and houses on slopes), each dwelling type divided into 3 subtypes depending on the percentage of plots occupied within the settlement. It was necessary to establish this last subtype because so many areas in Kabul are in the process of being developed, it is therefore important to evaluate their additional absorption capacity with time. In addition, because I used the typology to calculate densities, it was necessary to differentiate between settlements that had not reached their full density capacity.

[4] Ikonos Satellite images have a resolution of 1 meter, i.e. it is possible to clearly identify individual houses and even partition walls between properties. These images could become an source of very important data for the future development of Kabul.

Kabul - Housing Typology derived from Ikonos satellite image (2004)

Type of development	Dwelling Design	% of plots occupied in the settlement	Type number
Formal	Apartments	fully occupied 80% to 100%	1
	Townhouses	fully occupied 80% to 100%	2
	Detached houses	fully occupied 80% to 100%	3
		Occupied at between 50 to 79%	4
		Occupied at between 20 to 49%	5
	Courtyard houses	fully occupied 80% to 100%	6
		Occupied at between 50 to 79%	7
		Occupied at between 20 to 49%	8
Informal	Detached houses	fully occupied 80% to 100%	9
		Occupied at between 50 to 79%	10
		Occupied at between 20 to 49%	11
	Courtyard houses	fully occupied 80% to 100%	12
		Occupied at between 50 to 79%	13
		Occupied at between 20 to 49%	14
	Houses on slopes	fully occupied 80% to 100%	15
		Occupied at between 50 to 79%	16
		Occupied at between 20 to 49%	17

in addtition, it is estimated that about 10,000 people or 4000 households live in tents

Table 3: Kabul - Housing Typology

One housing type is missing from Table 3: the tents settlements of refugees estimated at about 10,000 people in Kabul in 2004. These settlements are difficult to identify accurately on the satellite image. Their absence in the typology does not mean that they do not represent an important social issue which should be solved soon. However, one should note that if refugees had waited to be allocated land legally in formal development instead of building spontaneously informal settlements, the population living in tents would be much larger than what it is now, probably reaching the millions. One should therefore acknowledge that the construction of informal settlements acted as a safety valve.

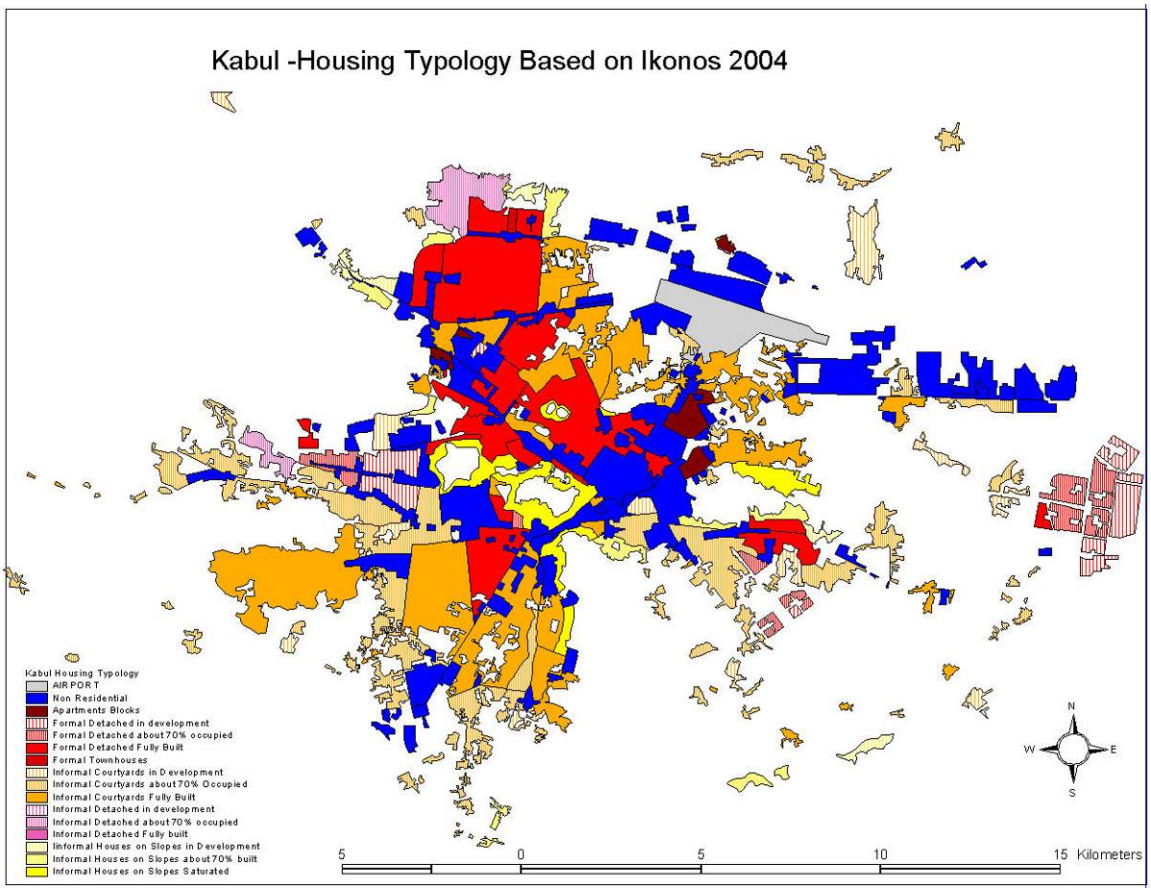

Figure 8: Map of detailed typology corresponding to categories in Table 3

Table 4 shows the distribution of housing area per type. We can see that of the 17 types identified in the typology, only 14 are represented. There are no courtyard houses in formal settlements.

Kabul - Distribution of the Housing Stock by Type and sub-types (2004)

Total	Residential Land Use		Area	Population	% Area	% Population
	Formal		32.66	531,104	31%	18%
	Informal		71.56	2,442,223	69%	82%
	Total residential areas		**104.22**	**2,973,328**	**100%**	**100%**
Formal						
	Apartments		1.80	90,747	6%	17%
	Detached	Occupied at between 20 to 49%	4.28	21,021	13%	4%
	"	Occupied at between 50 to 79%	3.77	43,243	12%	8%
	"	Fully occupied 80% to 100%	22.64	370,907	69%	70%
	Townhouses		0.17	5,186	1%	1%
			32.66	531,104	100%	100%
	Total Formal as % of total Residential		**32.66**	**531,104**	**31%**	**18%**
Informal						
	Courtyards	Occupied at between 20 to 49%	4.88	60,369	8%	3%
	"	Occupied at between 50 to 79%	21.85	631,061	38%	32%
	"	Fully occupied 80% to 100%	31.23	1,288,208	54%	65%
			57.96	1,979,638	100%	100%
	Total Courtyards as % Total residential		**57.96**	**1,979,638**	**56%**	**67%**
	Detached	Occupied at between 20 to 49%	0.05	602	2%	1%
	"	Occupied at between 50 to 79%	3.26	86,654	98%	99%
	"	Fully occupied 80% to 100%	0.02	686	1%	1%
			3.33	87,941	100%	100%
	Total Detached as % of Total residential		**3.33**	**87,941**	**3%**	**3%**
	Houses on slopes	Occupied at between 20 to 49%	1.46	19,902	14%	5%
	"	Occupied at between 50 to 79%	3.23	102,513	31%	27%
	"	Fully occupied 80% to 100%	5.57	252,229	54%	67%
			10.26	374,644	100%	100%
	Total Slopes as % of Total Residential		**10.26**	**374,644**	**10%**	**13%**

source: Interpretation of Ikonos 2004

Table 4: Kabul -distribution of the Housing Stock by types and Sub-Types (2004)

Calculation of densities

Type	Description	Stage of development	dw_ha	HH_dw	p_HH	Dens_ha	Num		land per Dw	% streets	**plot size**	floor coverage	floor area/hh	Floor area per person
AIRP	Airport	0%	0	0	0	-	20							
C	C	0%	2.50	1	6	15.00	18							
FA3	Formal Apartments	100%	**70.00**	1.2	6	504.00	7	Formal Apar	143				**44**	**7.33**
FD1	Formal Detached	30%	6.30	1.2	6.5	49.14	1							10.00
FD2	Formal Detached	70%	14.70	1.2	6.5	114.66	3							10.00
FD3	Formal Detached	100%	**21.00**	1.2	6.5	163.80	5	Formal Deta	476	50%	**238**	0.4	79.37	**12.21**
FT3	Formal Townhouse	100%	**46.79**	1	6.5	304.14	6	Formal Towr	214	30%	**150**	0.7	104.72	**16.11**
IC1	Informal Courtyard	30%	7.50	2.2	7.5	123.75	10							6.00
IC2	Informal Courtyard	70%	17.50	2.2	7.5	288.75	12							6.00
IC3	Informal Courtyard	100%	**25.00**	2.2	7.5	412.50	14	Informal Cou	400	25%	**300**	0.4	54.55	**7.27**
ID1	Informal Detached	30%	6.90	2.2	7.5	113.85	9							6.00
ID2	Informal Detached	70%	16.10	2.2	7.5	265.65	11							6.00
ID3	Informal Detached	100%	**23.00**	2.2	7.5	379.50	13	Informal Det	435	40%	**261**	0.4	47.43	**6.32**
IS1	Informal Slopes	30%	8.24	2.2	7.5	135.97	15							5.00
IS2	Informal Slopes	70%	19.23	2.2	7.5	317.26	16							5.00
IS3	Informal Slopes	100%	**27.47**	2.2	7.5	453.23	17	Informal Slo	364	40%	**218**	0.6	59.57	**7.94**

Table 5: calculation of densities derived from the typology

Calculation of Housing stock capital value

	Area	Population	Stage of devel	Floor space per person m2 (from Table 5)	Total floor space (m2)	Sub sums	Price of constructi on $/m2	Total Fixed capital investment in construction alone in Millions of US$
Airport	4.39	-	100%	-	-			
Non residential	36.30	54,456	100%	-	-			
Formal Apartments	1.80	90,747	100%	7.33	665,480	665,480	200	**133**
Formal Detached in Development	4.28	21,021	30%	10.00	210,213			**-**
Formal Detached 70% Occupied	3.77	43,243	70%	10.00	432,427	5,171,414	200	**1,034**
Formal Detached Fully Built	22.64	370,907	100%	12.21	4,528,774			**-**
Formal Terrace Housing	0.17	5,186	100%	16.11	83,557	83,557	150	**13**
Informal Courtyards in Development	4.88	60,369	30%	6.00	362,214			**-**
Informal Courtyards 70% Occupied	21.85	631,061	70%	6.00	3,786,364			**-**
Informal Courtyards Fully Built	31.23	1,288,208	100%	7.27	9,368,785	14,045,235	80	**1,124**
Informal Detached in Development	0.05	602	30%	6.00	3,610			**-**
Informal Detached about 70% Occupied	3.26	86,654	70%	6.00	519,922			**-**
Informal Detached Fully Built	0.02	686	100%	6.32	4,339			**-**
Informal Slopes in Development	1.46	19,902	30%	5.00	99,510			**-**
Informal Slopes 70% Occupied	3.23	102,513	70%	5.00	512,566	2,615,522	80	**209**
Informal Slopes Fully Built	5.57	252,229	100%	7.94	2,003,446			**-**
	144.91	3,027,783			22,581,207	22,581,207		**2,513**

Table 6: Calculation of the capital value of the Housing stock

Calculation of additional absorption capacity of existing housing stock

	Area	Population	Stage of devel	addtitional people when existing area fully densified	subtotals
Airport	4.39	-	100%	-	
Non residential	36.30	54,456	100%	-	
Formal Apartments	1.80	90,747	100%	-	
Formal Detached in Development	4.28	21,021	30%	14,715	**27,688**
Formal Detached 70% Occupied	3.77	43,243	70%	12,973	
Formal Detached Fully Built	22.64	370,907	100%	-	
Formal Terrace Housing	0.17	5,186	100%	-	
Informal Courtyards in Development	4.88	60,369	30%	42,258	
Informal Courtyards 70% Occupied	21.85	631,061	70%	189,318	
Informal Courtyards Fully Built	31.23	1,288,208	100%	-	
Informal Detached in Development	0.05	602	30%	421	**302,679**
Informal Detached about 70% Occupied	3.26	86,654	70%	25,996	
Informal Detached Fully Built	0.02	686	100%	-	
Informal Slopes in Development	1.46	19,902	30%	13,931	
Informal Slopes 70% Occupied	3.23	102,513	70%	30,754	
Informal Slopes Fully Built	5.57	252,229	100%	-	
	144.91	3,027,783		**330,367**	**330,367**

Table 7: Calculation of the additional absorption capacity of the housing stock

Annex 2 : Terms of reference for the preparation of Kabul development Plan

Terms of Reference for Planning for Afghanistan's Cities

Background

1. The Government of Afghanistan, through an IDA/IBRD loan from the World Bank, is preparing plans and feasibility studies for the future development of Kabul, Jalalabad, Herat, Mazar and Kandahar. The Ministry of Urban Development and Housing is thus seeking the services of a qualified firm/s to assist it and the targeted municipalities prepare such plans and begin a process of institutionalization of a planning process in the cities of Afghanistan.

2. The last plan for Afghan cities was one prepared for Kabul in 1978. Since the preparation of that plan, the city has seen 23 years of war with the destruction of most of the city's infrastructure and its economy, and tremendous population growth consisting largely of marginalized refugees and displaced persons and numerous government changes. Most recently, that Master Plan has been suspended by the Ministry of Urban Development and Housing as a planning tool for the municipality; thus leaving a vacuum in operations.

3. The status of planning has had several negative effects on urban management and development. Most importantly, it currently acts as a barrier to secure tenure. Currently, many settlements fall outside the Master Plan of Kabul or fall within areas not identified as residential according to the Master Plan. Most often, these areas house poor residents, IDPs and returnees. The lack of recognition of these areas is also a barrier to the provision of services by the municipality. Additionally, settlement is occurring on untenable land that will be impossible or expensive to service in the future.

4. Clearly, a new plan is necessary. However, the current framework is a Master Planning one which is unable to cope with the demands of a rapidly changing environment. Overall, the Master Planning methodology is currently considered outdated worldwide for the following reasons: it is cumbersome, top-down, it lacks flexibility, people do not feel ownership, it requires too much analysis and data gathering. By the time the Master Plan is ready, usually 2-3 years later, the urban reality is no longer the same, resulting in a poor implementation record. Subsequently, the planning field has made significant changes in the way that city plans are prepared to focus on strategy, and priorities and also the implementation of the plan through the identification of actions, projects and required investments and human resources.

5. But moving towards the new planning framework, and indeed formulating a new plan, will prove difficult given the current level of skills and capacity within country and also existing conceptions of planning. Regarding the latter, the plan and planning is viewed currently in Afghanistan as 'graphic design' and not as 'strategy'. Furthermore, the idea of linking planning to budgeting at the municipal level is also non-existent partly because capital budgeting does not occur at that level. An almost 30 year vacuum of outside engagement has led to a concurrent vacuum in skills necessary for plan formulation.

6. Finally, institutional confusion in responsibilities between the Ministry of Urban Development and Housing and the municipalities stymies efforts to formulate a new plan.

E.

1. Purpose of Exercise

7. It is against this backdrop that plans for the major cities needs to be formulated, covering a period of 7 years. These would need to encompass a more long term strategy for the cities as well as short term investment plans including identified projects and subsequently feasibility studies. However, the absence of a modern planning system in Afghanistan, the vacuum in skills and capacity require these exercises to go beyond mere plan formulation, but should also address these issues in some way.

8. Subsequently, the exercise will:
   - Develop an Interim Land Use Plan for the identified cities to replace the existing Master Plan[5]
   - Identify a development agenda for the identified cities including needed infrastructure, housing, economic development, social facilities and a subsequent development plan
   - Identify clearly the respective role of the private sector and the government in the development of cities.
   - Identify the impact on various part of the population of current government policy and regulations and proposed
   - Identify the actions and resources necessary for the success of such a plan; thus identify projects and an investment plan for the identified cities.
   - Develop feasibility studies for key investments including projected impact on the welfare of different income groups;
   - Identify the human resources necessary for the success of such a plan; thus formulate a capacity building plan for planners in the identified municipalities and in the Ministry of Urban Development and Housing
   - Clarify some roles and responsibilities of the municipality and the ministry in a future planning system
   - Start a process to institutionalize a participatory planning system in Afghanistan.

Description of Services

9. The successful firm will work directly with planners and engineers from the Department of Planning in the Ministry of Urban Development and Housing and with the planners in the identified municipality to formulate the development plan, feasibility studies, capacity building programs and some instruction to the institutionalization of planning.

10. The **development plan** will be produced in a participatory manner taking into account the development needs at the community/neighborhood level, the district level and the municipal level. The development plan will focus on land management and in projecting the spatial distribution of the future population of Kabul in the next 5 years. The development plan is not a substitute for the sectoral planning made within line agencies, like public works, water, sewer, health, education, etc. The development plan including a projection of the spatial distribution of the population becomes an input and document of reference in the planning exercise conducted by the line agencies within their own sector. It is futile for the planning department to project for instance the location of schools, size of classrooms etc. This is better done by specialized line agencies who are better aware of their own constraints in manpower and budget.

[5] The interim land use plan will provide the basis for development decisions. This will be adjusted after the adoption of an appropriate Land Use Management System.

11.

12. It is envisaged that the planning process will include several phases.

Phase One: identification of National and Municipal government objectives.

13. The consultant will consult with various level of government to express government priorities objectives concerning urban areas and the welfare of the urban population. These priorities will be ranked and cover access to land, housing, infrastructure and social services and the quality of the urban environment.
14. During the course of the study the consultant will regularly consult with government to discuss the implications of objectives on the development of the city in light of new data which may arise.

Phase two: Data Gathering and Data Analysis.

15. During this phase, the consultant will review existing data, conduct field visits, hold discussions with relevant stakeholders to collect information necessary for the formulation of the Kabul Development Plan. The availability of Ikonos satellite imagery at 1 m resolution for 2002 and 2004 will greatly facilitate spatial data gathering and processing. All data collected by the consultant will be spatially referenced and integrated in GIS form to allow further analysis and the development of time series by the ministry and the municipal government. It would be useful if the consultant divided the city into homogenous neighborhoods or planning zones following the administrative boundaries of Districts and Gozars. The consultant will avoid burdening the report with long descriptive parts. Most data will be presented in the forms of tables and graphs followed by succinct interpretation and analysis.

16. Needed data includes, but will not be necessarily restricted to:

- A review of current urban population estimate for Kabul by various institutions, average household size. Identification of the current natural growth rate and hypothesis for rate of migration toward Kabul for the next 10 years.
- A detailed existing land use map of Kabul. It is expected that this analysis will identify
    a. A typology of neighborhoods/districts of the city. It is expected that needed data for this assessment will include land use (commercial, residential etc), type of housing, density (dwelling units/ha, people/ha , floor area ratio) range of households' income, land tenure, price range for land, cost of construction per m2 and rents, cost of water per m2 in various housing types.
    b. The location of primary schools, secondary schools, dispensaries and hospitals
- A map of population densities . The consultant will make an evaluation of current population and densities based on already existing neighborhood survey and on the typology developed above. Additional spot check may be needed to increase reliability.
- Evaluation of daily population movements from residential areas to place of employment. This will be based on existing traffic counts completed by spot surveys.
- A map of current land values, and rents per m2
- A map of Kabul showing the areas of land belonging to the government differentiating municipal land from land owned by various branches of government
- Current economic and social data in Kabul including:
    a. Household's income distribution and % of income spent on rent. Consistency between housing typology and income distribution;

b. Ratio of School age population and attendance by gender. Consistency between school attendance and number of schools identified in the land use map;

- Current infrastructure network and current planned investments including:
  a. Community and social facilities, particularly schools and health clinics
  b. Coverage and capacity of the following networks: water supply, sewage, roads and transportation, electricity, telecommunications and solid waste. Infrastructure network in preparation by line agencies and already budgeted.
- A Basic Priority Needs Assessment from Communities based on Neighborhood and District Level consultations.

Phase Three: Formulation of a spatial strategy:

12. Based on the data collected and analyzed above, the consultant will identify the current spatial development trends of Kabul for population, jobs and retail distribution.
13. Based on the objective of the government and the data analyzed above the consultant will recommend a strategy concerning the densification of existing neighborhood, the expansion of the city in new areas. This strategy will be concretized in the following documents:

14. Land Use Regulations and Housing Standards

- A zoning map showing the existing areas and new areas likely to be developed in the future
- A set of land use regulations corresponding to the various zones, which would include when relevant: use restrictions, plot sizes, set backs, floor area ratios, street width.
- A proposal for new land subdivision regulations including the same parameters as above with different standards dependent on topography and households income groups. For each type of subdivision, the resulting cost for land and on site infrastructure per m2 of usable land will be calculated. Subdivision regulations will be used in conjunctions with real estate market prices and local infrastructure costs to calculate the minimum income required to afford the standards proposed. The corresponding minimum income map will complement the zoning map for new areas to be developed.
- An affordability test of the new proposed zoning and land subdivision regulations. Based on current land and construction prices the consultant will calculate the minimum household income required to afford a plot and a minimum house in each residential zones and in new land subdivisions. Iterations may be made to adjust standards so that 90% of households could afford a dwelling in formal subdivisions.
- A map of projected densities and population per neighborhoods. This map and corresponding tables will be provided to the various Municipal and National line agencies to allow them to plan their investments in social services and infrastructure.

15. ***Assessment of required Primary infrastructure investments***:
16. The consultant will assess the need in primary infrastructure investments to service the needs of the projected population, taking into account the level of services affordable in various neighbourhoods. This will include roads, water supply, storm drainage, sewers, and electricity. The consultant will provide a calculation of necessary capacity per neighbourhood, a preliminary layout of the primary network and indicate the approximate costs of the main infrastructure investments needed. The consultant will make an estimate of the cost of the share of the cost of the primary infrastructure network per neighbourhood, per ha of land developed and per household.

17. additional investments

18. The consultant may identify the location and costs of additional investments related to the development of the city, such as need for gardens, park, tree planting, restoration of historical monuments, etc.

19. ***Capacity Building*:** The planners in the MUDH and the Municipality will receive on the job training and capacity development through the process of preparing the plan.

20. A training program in current planning techniques consisting of a series of study tours, seminars, lectures and on the job technical assistance will be developed for the planners of the Kabul Municipality and the MUDH. Suggested seminar topics will include*:*

- Concepts in Planning – an examination of structure planning, integrated development planning, land use management, functioning of real estate markets.
- Tools for Planning – including GIS systems, data collection systems and methodology.
- Processes for Planning – including participatory planning.

21. **Towards the Institutionalization of Planning**. Some clarification of the roles and responsibilities of each of the agencies will emerge, through the preparation of the plan. These will be documented and submitted to the MUDH for consideration.

Outputs and Deliverables

1. An Inception Report outlining the Consultants detailed approach, timing of individual Consultants inputs, counterpart requirements will be prepared and submitted within 2 weeks of the commencement of the study.
2. Phase 1 report: "*identification of National and Municipal government objectives"* delivered within 1 month of the commencement of the study.
3. Phase 2 report : *"Data Gathering and Data Analysis*." will be prepared and submitted within 3 months of the commencement of the study. The report will include all necessary maps, texts, charts, table diagrams, etc to support the plans recommendations and to respond to the scope of work outlined earlier.
4. Phase 3 report: *"Formulation of a spatial strategy"*. (items 12 to 21) This report will be presented in draft form within 5 months of the start of the study. The consultant will organize a 2 days seminar during which the findings and recommendations of the report will be discussed. The government will review it and provide comments within 3 weeks of the date of the seminar.
5. Following the review and comment on the Draft Spatial Strategy a final Spatial Strategy report reflecting the comments submitted by relevant stakeholders will be submitted within 1 month of the receipt of such comments.
6. Five hard copies of each report will be submitted to government in addition to 5 digital copies on DVDs containing all report and background information.
7. Presentation of data used during the preparation of the report. All data used during the preparation of the report, including all tables and maps will be prepared using off the shelf spreadsheets and GIS software ARCVIEW compatible. All documents will be submitted in digital form on DVD disks.

Needed Skills

It is expected that a variety of skills will be needed throughout the duration of the project. These are outlined below.

	Team Leader/Urban Planner	7
	Municipal Engineer	5
(Kabul)	Social Planner	3
	Economist/ Financial Analyst	3
	GIS specialist	3
	Other Specialists	4
	Local Staff	36
sub-total		*61*
	Team Leader/Urban Planner	4
	Municipal Engineer	3
(1 Provincial Town)	Social Planner	1
	Economist /Financial Analyst	1
	GIS Specialist	2
	Other Specialists	2
	Local staff	24
sub -total		*37*
TOTAL - Kabul and 4 Towns		**209**