



Urban growth management-the Saudi experience

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Abstract

Saudi Arabia experienced a high rate of urbanization during the period 1970–1986 resulting in accelerated annual growth rates for Saudi cities averaging more than 6.4%. Higher than usual growth rates created demand for the opening up of huge areas to meet housing, commercial, industrial and other land uses. Government's land grant policy and liberal interest free loans resulted in massive expansion of cities and towns all over the country with major cities of Riyadh, Jeddah, and Dammam having the biggest share. Lack of planning frameworks and weak city institutions could not direct the growth properly leading to sprawl and lop-sided development. This meant rapid extension of road network and utilities with high financial outlays. The slow-down in the economy and ever-increasing demand for infrastructure provision forced the government to initiate growth boundaries to tackle these problems in 1986. The paper discusses the methodology adopted and the process of devising urban limits and evaluates their impact on urban structures of Saudi cities. The paper draws some conclusions in the realization of objectives of the exercise with respect to, (a) control urban sprawl by encouraging infill development where utilities were generally available; (b) reduce cost of provision of infrastructure through better coordination tied to commonly agreed phasing; (c) maintain natural environment around the cities.

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1. Introduction: establishing the national context

Saudi Arabia has a population of 16.9 millions living in settlements ranging from metropolitan areas of over 2 millions to villages consisting of few houses (Ministry of Finance, 1992). Except for the Nafud desert in the north and big Empty Quarter of Rub-al-Khali in the southeast, the rest of

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Table 1
Growth rates of selected Saudi Arabian cities

City	Population			% Annual growth rate	
	1940	1974	1986	1940–1974	1974–1986
Riyadh	30,000	672,382	1,310,624	9.57	5.75
Jeddah	30,000	568,046	1,032,855	9.03	5.11
Dammam	—	127,844	260,048		6.1
Makkah	80,000	366,801	666,940	4.58	5.1
Buraidah	20,000	76,442	208,152	9.02	8.70
Abha	—	31,359	160,290		14.60

Source: Population Censuses, Ministry of Finance, Kingdom of Saudi Arabia, 1992.

construction component of housing was largely funded through the advance of interest free loans by the government and a total of 550,532 were financed under the programme up to December, 1996 (Real Estate Development Fund, 1998). The issues of lop-sided urban growth have been addressed through the preparation of the National Spatial Strategy. The overall objective of this Strategy is to achieve, over the long run, a balanced development between regions on one hand, and within regions on the other (Al-Hathloul & Abdel Rahman, 2003b; Al-Hathloul, 1996).

Saudi Arabia is one of the few countries in the world that has no housing shortage. Large tracts of land, both developed and undeveloped, are a common scene in major urban centers. This indicates the realization of an important national objective: housing the rapidly growing urban population in a short span of time. However, the rapid urban growth could have been guided more rationally by employing effective planning and management tools. The pace of development was so rapid that the limited planning efforts were rendered ineffective. These included the master plans prepared for a number of rapidly growing cities that became outdated in a short period of time. The problem was further compounded by the lack of institutional support in the country, particularly at the local level, to manage urban growth. This was also an important factor in the non-implementation of master plans of some cities (Al-Hathloul, 2003).

Saudi Arabia has a strong centralized system of government whereby federal ministries/agencies directly provide services through their field offices. These include arterial roads, water, electricity, sewerage, drainage, telecommunication, schools, health facilities, and other services. Municipalities are responsible for providing municipal services and appointed mayors head these. The municipalities are under the administrative control of Ministry of Municipal and Rural Affairs (MOMRA). There are 13 regions in the country that have appointed governors who are basically responsible for law and order, and coordination of development activities. The municipalities have no authority to levy direct taxes, such as a property tax. Even the provision and maintenance of services and utilities is heavily subsidized by the federal government. The municipalities get their budgets from the federal government on the basis of population and specific projects. Unlike the case in many other countries, this gives the government a strong tool to intervene in the planning and development of all settlements (Al-Khedheiri, 2002).

It was with this background that the MOMRA felt the need to initiate delineation of urban growth boundaries in 1984. After a thorough review of the situation in consultation with the mayors of five major cities, the Ministry made a recommendation to the Council of Ministers

The first option, the engagement of consultants would have taken a long time due to procedural problems and non-availability of sufficient number of qualified firms in the country. Engagement of foreign firms usually requires a much longer time period. In addition, it would have required a huge financial outlay for which allocation in the national budget would have been difficult to obtain. In the second option, it would have been necessary to expand the small pool of experts available in the DMTP considerably through fresh recruitment, which would have been time consuming, particularly when experts were not available locally. Also, dealing with a large number of settlements spread all over the vast country from the center would have been logistically difficult. This would have required a much longer time span than that fixed by the Council of Ministers and a substantial financial allocation. In the third option, the work was to be carried out by the limited municipal staff located in each municipality with strong support from the DMTP at every stage of the work. This option allowed for the simultaneous start of work in all the selected settlements; hence, taking less time and costing less in required financial resources. It also meant active local participation for injecting pragmatism in the study outputs and greater acceptability by all concerned authorities facilitating implementation at a later stage. However, in this option, some compromise on quality was inevitable, as the reliance was to be on the municipalities' staff, which were mostly unqualified and inexperienced.

The pros and cons of the three options were debated and finally the third option was selected in view of the technical know-how, on-the-ground realities, financial aspects and the emphasis on the active involvement of the local staff. Once this approach was chosen, the central group in the DMTP undertook the preparation of a detailed and comprehensive manual laying down the objectives, scope, methodology, and outputs of the study. As the manual was intended for the unqualified and inexperienced staff of the municipalities, it was made very simple using examples wherever possible. The central group of professionals was divided into two-man teams consisting of one expert and one DMTP counterpart and assigned on a regional basis to work with the staff of the municipalities. These teams continued to work closely with the municipal staff and provided step-by-step guidance throughout the study period. This arrangement also provided an opportunity to the DMTP teams to get first hand knowledge of the prevailing conditions in the settlements, which proved extremely useful at various stages of the study particularly at the time of defining the urban growth boundaries. In terms of outputs each town was to produce a report and an atlas presenting the basic data, projections, analysis and recommendations. This was considered necessary so that each municipality would have all the information available to them to implement the urban growth boundaries.

2.3. Data collection and analysis

The most urgent problem to overcome was the non-availability of updated maps. The available maps were 10–20 years old and had been prepared at varying scales. A proper updating of the maps for the 100 towns through aerial photography, spread as they were around the country, would have taken years and considerable financial expenditure. In view of the urgency of completing the work, all available maps and aerial photographs of the towns were collected from different sources and the municipal surveyors were guided to record additions and major changes on the old maps. In addition, the approved subdivisions not covered by the available maps were also located on those maps. The end result was updated maps, which, although sometimes of

intra-city analysis had to be carried out along with the existing and proposed land uses. Also, all the three levels play a significant role in determining the future directions and patterns of growth.

Assessment of the existing public facilities was undertaken to determine deficiencies in the systems with particular reference to space requirements. The future requirements were calculated by using planning standards to cater to the population increase. A special importance of this analysis was to assess the land requirement so that it could be provided while delineating the urban growth boundaries. The public facilities included education, health, religious, cultural, recreational, governmental and others.

Growth trends of the towns for possible future growth scenarios were studied taking into consideration the topography, existing built-up area, approved subdivisions, infrastructure networks, committed projects/sites and future land requirements. This analysis consisted essentially of combining the analytical maps of various utilities, public services, road networks and topographical features to obtain a composite picture of the projection of growth trends at the settlement level. Potentials and constraints were built into the scenario through discussions among the experts and the local officials. The availability of government lands in the vicinity of the builtup areas was an important factor in visualizing the future growth trends of the settlements under study. All of this was fine-tuned to provide a basis for the next important stage of the study.

2.4. Devising urban growth boundaries

All these analyses led to the delineation of the urban growth boundaries for the year 2005 (1425 AH) with the first phase covering the period to the year 1995 (1415 AH). The underlying factor was to provide enough land to cater to the needs of the present and projected populations for the two phases. Then the designated lands were to be earmarked with the provision of utilities and services to promote compact and contiguous development. However, local realities had to be taken into consideration, as there existed plenty of subdivided land in almost all the towns, particularly the big ones. Hence, the boundary delineation was not based on future requirement of land alone but the judicious use of subdivided land became a crucial factor. The end result was a liberal delineation of the boundaries, particularly in the big cities. However, in smaller towns due to the non-existence or limited number of subdivisions the boundaries established were much tighter.

A number of alternatives were prepared to arrive at the best possible one. Evaluation criteria were developed for the selection of the most suitable alternative. The main elements of the criteria, among others, included (a) spatial integration of built up areas; (b) economical provision and maintenance of infrastructure and services; (c) development and utilization of approved subdivisions, and (d) efficient utilization of the idle capacity of the existing infrastructure. The basic determinants of development phases for the optimum alternative have been defined by availability of infrastructure in areas designated for urban expansion, integration of the existing builtup areas, growth and development of builtup areas along existing axes and arterial roads, and approved land subdivisions in which roads were paved and asphalted (Zahid, 1995). The alternatives with the application of the criteria were subjected to detailed discussions at the local level and the municipalities closely collaborated with the representatives of all sectoral ministers and agencies responsible for the provision of infrastructure and services in the urban areas. At the regional level, governors were involved in the final stages of the study. It was, however, the central

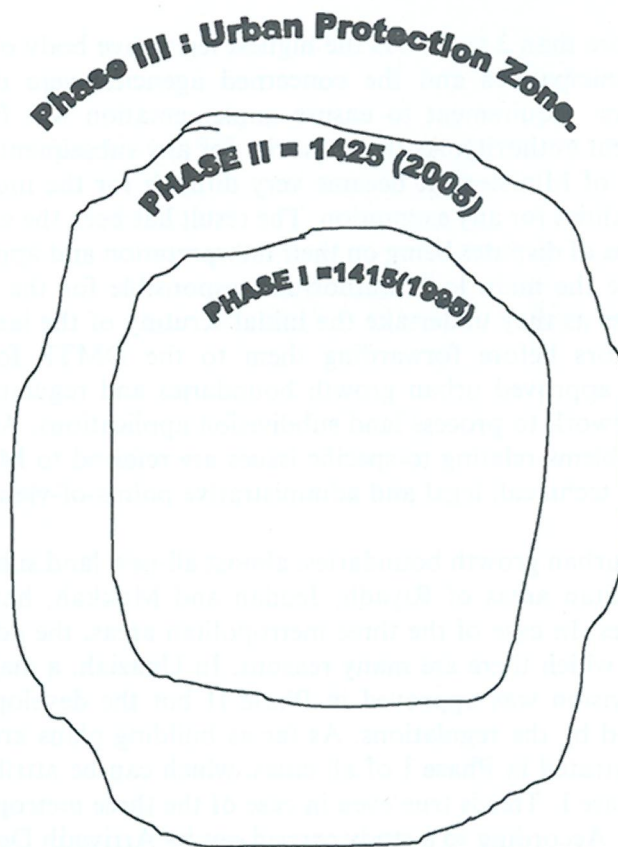


Fig. 2. Urban growth boundaries phasing.

obtaining approval of land subdivisions before the start of Phase II. The Minister of MOMRA has been authorized to issue directives and ordinances for the operationalization of these regulations. MOMRA has been directed to study areas in the urban protection zone and propose control measures for these areas.

A system for revisions/modifications of urban growth boundaries was also specified by the Council of Ministers. MOMRA was directed to undertake a full study of such a town and present its findings to a committee formed by representatives of MOMRA and the Ministries of Interior, Finance and National Economy, PTT, Industry and Electricity and Communication. Recommendations of this committee were to be forwarded to the Council of Ministers for final decision, thus making the procedure for changing the urban boundaries quite difficult (The Council of Ministers, 1989).

3. Implementation issues

The implementation of urban growth boundaries started immediately after their approval by the Council of Ministers as the developers and the municipalities had been facing a freeze on new

have been some jurisdictional problems whereby the Ministry of Agriculture and Water started granting approval for agricultural subdivisions in urban protection zones without going into the present and future implications for the environment as well as the cities. These subdivisions, located on the fringes of the cities, are primarily for building rest houses, which are used to spend evenings or weekends. Normally these homes have agricultural lots attached to them. If the lot size is big and agricultural character is maintained then there is no problem but if the lot size is small and there is no proper infrastructure it can create serious problems for the municipal authorities. The problem of rest houses is limited to some selected areas in the country but it has to be addressed in view of future implications when these areas will integrate with urban structures necessitating provision of higher level of services and utilities.

Growth controls tend to raise the value of existing housing and sites on which development is still allowed and lower the value of undeveloped land and properties that might be profitably redeveloped (Fischel, 1990). This has been a major concern in respect of growth management systems. Restricting water extensions and setting urban limit lines may affect land values (Gleason et al., 1990). To date there has been no proper study in Saudi Arabia to measure the impact of urban growth boundaries on land prices and property rentals. The indications are that there has been no impact during the period 1990–1995. However, after 1995, when speculators came to know that lands in Phase II would not automatically become eligible for servicing, the prices of land in the second phase came down. The reason for this was that, at the time of devising urban growth boundaries, there was surplus housing in major cities and abundant subdivided land, both developed and undeveloped, in almost all the cities, but particularly in the five metropolitan areas. In view of surplus housing and subdivided lands it can be said that the Kingdom was in a unique situation to undertake the study and implement it without fear of price escalation. As 100 settlements were covered simultaneously there was also no danger of spill over effect.

There have been some questions regarding the arbitrariness of the boundaries particularly from those landowners whose lands were either fully or partially excluded by being on the boundary. This problem is related to the adjustment of boundary alignment with respect to land ownership. As the land ownership information was not available at the time of delineation of the boundaries this problem had to arise. On the other hand, the absence of land ownership information probably eliminated potential biases and pressures for the inclusion or exclusion of certain areas. These problems are now being resolved on a case-to-case basis by the municipalities in consultation with the DMTP.

In some small towns, it is already being realized that the boundaries are too tight, resulting in limited space for growth. This can be attributed to the absence of functional and economic base analysis, which was not undertaken due to time limitations and a lack of resources. This problem can be resolved through the revision of boundaries for which a procedure has been laid down. According to this, a technical committee located in MOMRA with representatives from various ministers may study the problems and make recommendations to the Council of Ministers through the Minister of MOMRA. The responsibility of technical solutions in the form of structure plans for much larger areas than that covered by the urban growth boundaries was also given to the MOMRA and these plans have since been prepared.

The technical and institutional capability of the majority of the municipalities is very weak, thereby creating difficulties with respect to the interpretation and implementation of the urban boundaries. The active involvement of the staff of the municipalities has been very useful for the

when the study was undertaken, even though they are now available through the introduction of the Provincial System. However there appears to have been active involvement of a large number of concerned functionaries at all the three levels of government. Even this extent of involvement was the first of its kind in the country and created an impact on the planning process in many ways.

The evaluation of urban growth boundaries will be assessed against the stated objectives of (a) control urban sprawl by encouraging infill development within the planned areas; (b) reduce cost of the provision of infrastructure through better coordination between its provision and urban development plan; and (c) maintain natural environment particularly around the cities through preservation measures.

It appears that urban sprawl has been influenced through the urban growth boundaries in number of direct and indirect ways. Firstly, the imposition of a moratorium for a 2-year period on the approval of new land subdivisions eliminated the prospective commitment of more lands for urban use irrespective of their locations. Experience in other places has shown detrimental effects if proper measures are not taken for the interim period during planning studies. Secondly, the introduction of urban protection zones around the cities was an effective check on the urban sprawl beyond Phase II. It also meant preservation of agricultural lands and the reservation of other vacant lands for future expansion. Thirdly, the approval of land subdivisions in Phase II, being tied to the provision of roads and public utilities by the developers, has been a big discouraging factor contributing to the control of sprawl. Wherever land subdivisions have been approved, as in case of Unaizah, a major town in Al Qassim region, the burden on the municipality for the provision of infrastructure has been shifted to the developer. Fourthly, the assigning of priority to the provision of public utilities and infrastructure to Phase I increased the attraction to subdivide and build in this phase as pointed out in case of Riyadh where utilization of serviced land, within Phase I, was accelerated. The success story of the three metropolitan areas Riyadh, Jeddah and Makkah is, however, questionable with respect to the approval and location of some new land subdivisions in Phase II without conditional ties. The boundaries could not be strictly enforced in the three metropolitan areas mainly due to ineffective local administration, which could not withstand the pressure from influential people having vested interests. But this does not mean that the boundaries have not had an impact on the development of these three metropolitan areas and the study of utilization of serviced land in Riyadh bears testimony to this effect. Certainly a more strict enforcement would have created much better results. One area of concern, in this regard appears to be the indiscriminate approval of agricultural subdivisions by the Ministry of Agriculture and Water on the fringes of some urban settlements. This problem is now being solved through the enforcement of the structure plans.

Urban growth boundaries do provide a technical basis for the programming and implementation of public utilities and services by all concerned agencies operating in the urban areas. These agencies have been directed by the Council of Ministers to focus on Phase I for the concentration of their programs. Thus, for the first time, provision of infrastructure has been effectively tied to the planning and multi-sectoral development in a coordinated manner. As the density is usually higher in the central areas of the cities, which are all covered by Phase I of urban growth boundaries, the utilization per unit length of public utilities is of much higher intensity, thereby increasing the efficiency. This approach, compared to the common scenes of lopsided extensions of utilities and road network in Saudi cities, is bound to yield better returns on

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