THE NATIONAL-LOCAL POLICY VACUUM IN SUSTAINABLE LAND USE PLANNING: AL-QATIF OASIS, SAUDI ARABIA

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Summary

Despite a high-level commitment to sustainable development in Saudi Arabia, many national policies (e.g. for land-use planning, the environment, agriculture and water) have largely failed to protect the natural resource base of one of its most important oases (Al-Qatif) through an absence of comprehensive and integrated policies, a lack of effective implementation of existing policies, a lack of effective co-operation between governmental agencies responsible for physical development, planning and environmental protection, and finally through a lack of public participation and education. We describe and highlight those factors that have contributed to the unsustainable development of the oasis and then offer guidelines for more sustainable development in the future.

1. Introduction

Internationally a shared vision of sustainability is developing and Saudi Arabia is among the majority of countries that have made a high-level commitment to sustainable

development. However, sustainable development and natural resource issues are diverse and complex and each country differs in terms of context, institutional structures, legislation, and environmental policies and tools. "Sustainability" is a social and political construct, like "democracy" and "liberty", and we are mainly concerned here with the mechanisms through which Saudi Arabia might debate, develop and implement an approach to sustainable development, rather than being concerned with what that development might comprise in detail.

For reasons of space we concentrate on the planning and use of land. Land-use planning policies and practices have a major role to play in achieving sustainable development. Planning can contribute to the prevention of depletion of natural resources, the prevention of damage to the environment and can provide guidelines for physical development based on the carrying capacity of the environment. Many national governments have been developing guidelines on environmental considerations in plans, the UK government being an example. They have produced guidelines for embedding environmental considerations in development plans and for the environmental appraisal of such plans. There are therefore a plethora of concepts, guidelines and tools which can contribute to sustainable development, including environmental impact assessment (EIA) for individual projects, and strategic environmental assessment (SEA) for evaluating policies, plans, and programmes, which together can contribute to making sustainability concepts operational. Our research in Saudi Arabia shows that a key issue is the vacuum that exists between national policies and implementation at the local level. First we set the scene, and then we review existing policies before discussing the problems of policy integration which exist, before finally making some recommendations for improvement.

2. Setting the Scene: Oases in Saudi Arabia

Oases in the Kingdom of Saudi Arabia are agricultural lands located inside the desert or on the coast, containing villages, towns or cities. Typically there is a main settlement located at the centre of the oasis, with satellite settlements scattered within or around the oasis. The oases are the main source of crops and vegetables, especially dates (the dominant plant is the palm tree), for the whole kingdom. There are many such oases; amongst the most important are Al-Qatif, Al-Hasa, Madinah, Al-Kharj and Al-Qasim (Figure 1).

Even before the discovery of oil, these oases played a vital role in the life of Saudi Arabia since it was here that water and land that could be cultivated were found and the oases were of prime importance in terms of economic and environmental resources. They also had the advantage of a cooler, more tolerable climate in an otherwise hot country. Their natural resources meant that they had undergone considerable agricultural development, able to provide a wide range of products, and they became the main centres of population. Some oases, such as Al-Hasa and Al-Qatif, have a large number of settlements located within them; others, like Al-Kharj and Madinah, have rather fewer.

Rapid growth during the last 30 years has produced a transformation in the patterns of the cities and settlements. Major urban social, economic, physical, and environmental

problems have been experienced during this swift urbanisation. The Saudi Arabian oases have been affected by a variety of familiar changes caused by the increased demand for land. That land has tended to be agricultural land. Al-Qatif oasis has witnessed rapid urban growth of a sort typical throughout the kingdom during the last three decades.

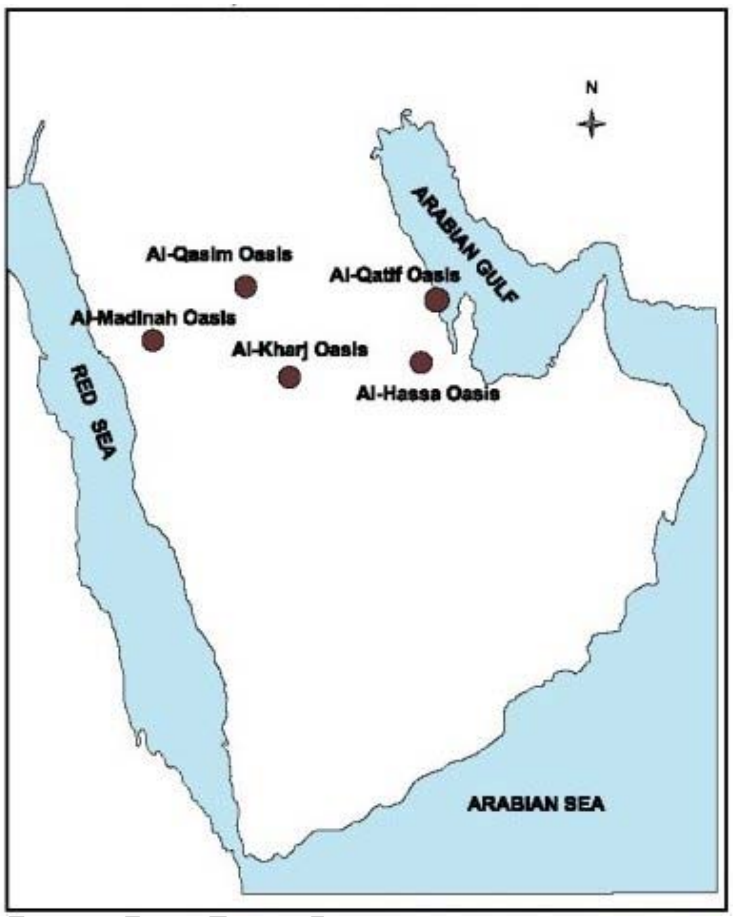

Figure 1. Oases in the Kingdom of Saudi Arabia

Table 1 shows the recent growth of the oasis population.

		1987	**1991**	**1993***
1	**Saihat**	30 028	43 793	58 060
2	**Anak**	8 917	10 332	17 291
3	**Umm Al-Hammam**	10 935	12 870	13 433
4	**Al-Nabia**	3 955	4 583	
5	**Al-Jish**	5 593	6 481	9 137
6	**Al-Mallaha**	2 555	2 980	3 763
7	**Tarut**	13 529	15 676	38 055
8	**Darin**	4 324	5 010	4 971
9	**Al-Robeiah**	6 163	7 901	
10	**Sanabis**	11 463	13 282	
11	**Al-Zur**	600	692	

		1987	1991	1993*
12	**Al-Qatif**	59 480	69 498	98 920
13	**Al-Qudaih**	28 362	32 885	23 578
14	**Al-Behari**	3 200	3 708	
15	**At-Tobi**	5 352	6 201	7 106
16	**Al-Khwaildiah**	9 630	11 158	7 869
17	**Al-Jarudia**	6 880	7 972	9 863
18	**Hillat Muhaish**	3 815	4 420	5 295
19	**Al-Awamiah**	14 573	16 844	33 468
20	**Safwa**	25 444	29 482	37 289
21	**Umm As Sahik**	6 102	7 070	9 523
22	**Al-Duraydi**	2 500	2 897	
23	**Al-Awjam**	4 809	5 572	8 628
24	**Abu Maan**	1 228	1 423	4 541
25	**Al-Ruwaiha**	250	290	

Source: Dammam Municipality, 1988, p. 216; Dammam Municipality, 1994, * National Census, 1993 pp. 1 – 26.

Table 1. Population growth in the oasis

Al-Qatif is Saudi Arabia's second largest oasis, located in the Eastern Province (Figure 2) and consists of 25 settlements. Before the discovery of oil, Al-Qatif oasis played a most important role in sustaining agriculture and other economic activities in the region. It was in particular a source of food, especially dates and vegetables, and fish and pearls from the Gulf. Al-Qatif's location on the gulf also means that it is an ideal centre for commercial activity. Al-Qatif oasis is situated on a low-lying coastal plain bordering the Arabian Gulf. Ground water is found 1-2 m. deep. The abundance of ground water is attributed to the plethora of artesian wells dug randomly in such a way that water has risen from the deep aquifers to the surface of the ground. The average temperatures in the region rise from about 25ºC at the beginning of the summer in May to around 42ºC in July and August. In winter the temperature goes down to reach a low of 7ºC in January and February. The rainfall in this region is both little and irregular, with the summer season (June–October) being virtually rainless.

According to the master plan for Al-Qatif drawn up in 1976, well before sustainability concepts had been embraced in the kingdom, the population of Al-Qatif city in Al-Qatif oasis was expected to increase from about 25 700 in 1975 to 32 000 in 1980 and to 92 000 in 1995. However, a 10% sample survey carried out by the Physical Planning Department of Dammam municipality at each one of the 25 settlements in the oasis in 1987 showed that the total population was 270 110 inhabitants. According to projections made by the same department, the 1993 population of Al-Qatif oasis was estimated at 313 780, assuming an average annual growth of 3.75% as shown in Table 1.

The land of the cities and villages of the oasis is dominated by residential use, this taking up 32% of the built-up areas. Industry, such as light industry, workshops, and warehouses, takes up about 1.3%. These activities are concentrated along the main roads of the settlements. Government buildings, such as schools, hospitals,

administrative offices and so on, also take up some 1.3%, most of them being concentrated in Al-Qatif city itself since it is the centre of the oasis, and in Safwa and Saihat. Commercial use, accounting for 1.1% of the built-up land, is distributed among the oasis settlements, and is concentrated on the main roads.

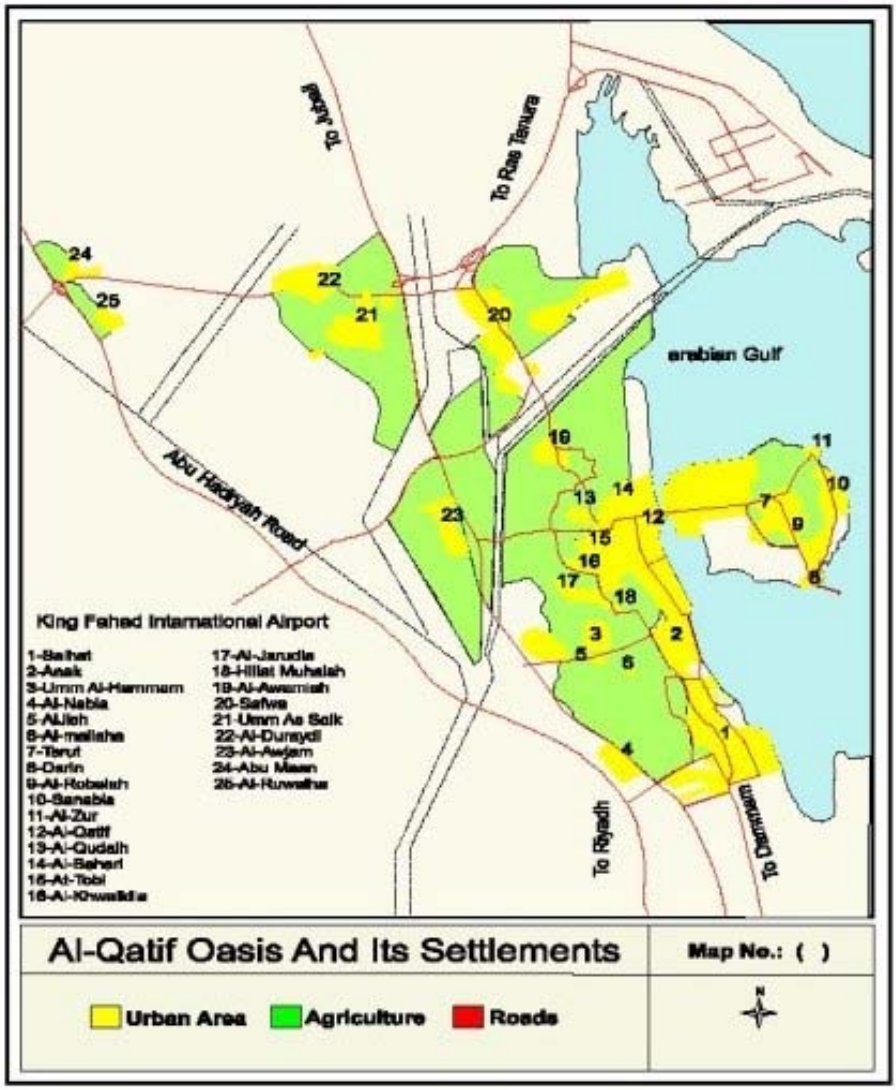

Figure 2. Al-Qatif oasis and its settlements

Agricultural areas at present consist of some 5 584 hectares in total and built-up areas about 5 080 hectares, including planned and unplanned vacant land. Vacant land is land which currently lies unused and was formerly a green area but has been designated for future non-agricultural utilisation.

The employment activities of the inhabitants of the Al-Qatif oasis area can be classified into four groups. The first of these is fishing. The second main area of employment has been trade. The third area of employment is the government sector, and this is the area that has seen the greatest growth in economic activities in recent times as a result of the oil boom, and the job opportunities and greater financial rewards presented by it. It is in the public sector that a great many of the population of the Al-Qatif oasis now work,

many of them for the Saudi Arabian Oil Company (ARAMCO). There has also been an increase in jobs relating to trade, commerce, housing, construction, transport, manufacturing, and service industries. The fourth group is farming. Working in the agricultural sector has, however, become less and less attractive because of the impact of the oil industry and the accompanying increase in public sector employment possibilities noted above. In addition, the small scale of farming operations, especially on tenanted land, has made it difficult to introduce technological changes, so that this has reinforced the low income level of smallholders, a further factor in making traditional farming less appealing.

3. The Impacts of Urban Growth

3.1. Impact on Agricultural Land

Within the oasis the stock of agricultural land shrank, within the three decades from 1965 to 1994, from 7 534 to 5 798 ha, while during the same period land under urban development grew from a mere 495 ha to 5 080 ha. In addition to this, land reclamation from the seabed has been taking place, in order to meet the demand for urban development.

An example of the impact of urban growth on the resources available to the communities of the Al-Qatif oasis is Sayhat, a town with a distinguished history. It is known to have been a flourishing settlement by the beginning of the fourteenth century, and one historian considered it the richest town in the whole oasis, with about 30 pearling boats sailing from its harbour. There were about 600 houses, around 400 of which were within the boundaries of the old town, and 200, mainly huts and shacks, outside. The prosperity of this period, however, did not endure. But after the discovery of oil in the region the town began to flourish again and it developed to such an extent that it became the second largest town in the oasis after Al-Qatif (see Table 1). The built-up area expanded from 68 ha to 1 085 ha, a 16-fold expansion. This development was, of course, at the expense of agricultural land, which was reduced greatly, not only in the north, south, and west but also on the land bordering the sea in the east. Another town, Anak, was also a historical community as can be confirmed by the evidence of archaeology and by its architecture. A famous Portuguese castle was situated near the town on the coast. The urban growth of Anak was particularly rapid (see Table 1), and this growth took place at the expense of the agricultural land, which suffered a reduction in area of 130 ha.

Other settlements such as Atobi, Al-Khwaildiah, Al-Jarudia, Hilat Muhaish, Umm Al-Hammam, Al-Mallaha, and Al-Jish are located in the centre of the Al-Qatif oasis where they are surrounded by agricultural land (palm trees) on all sides, and where any expansion is going to take place over this valuable resource. This pattern has been repeated throughout the oasis (Table 2).

	1935	**1960**	**1965**	**1975**	**1977**	**1985**	**1987**	**1993**
Saihat			62	68		1 085		1 153
Anak			64	72		267		379
Umm Al-	3	4.6		7		32		53

Hammam								
Al-Nabia		3			9		112	112
Al-Jish	6	8.5		21		25		29
Al-Mallaha	3.5	6.1		8.5		11		14
Tarut			12	33		440		580
Darin			26	40		41		64
Al-Robeiah			34	43		48		50
Sanabis			38	58		82		124
Al-Zur			2	2		3		8
Al-Qatif			71	90		844		890
Al-Qudaih	6.5	17		21.5		33		51
Al-Behari							7	
At-Tobi	3.5	5.2		7.5		12.5		19.5
Al-Khwaildiah	2	3.1		6		18		23
Al-Jarudia	3.5	6.3		8.5		22.5		34
Hillat Muhaish	2	2.5		3		8		14
Al-Awamiah	5	28		37		75		156
Safwa	23	47		83		198		710
Umm As Sahik		38			38		155	347
Al-Duraydi					30.5		64	82
Al-Awjam		4.5			8		60	101
Abu Maan		10			23		65	65
Al-Ruwaiha							21	21
								5 079.5

Source: Dammam Municipality (1988), p. 234; Al-Oqail, K., Al-Robeiah, A., Al-Arfaj, K., and Al-Ismail, I (1997)

Table 2. Al-Qatif oasis and its settlement growth

3.2. Impact on Coastal Land

Agricultural land, however, was not the only terrain to be affected by urban development; even the configuration of the coastline was altered, resulting in the loss of 1 750 ha to landfilling over the last three decades. Al-Qatif, Sayhat, and Anak in particular have experienced urban development because of their coastal locations, as has the island of Tarut. Tarut, indeed, has been especially affected by urban growth and by the construction of the corniche road. The loss of sub-tidal habitat in Tarut bay is of particular concern. The seagrass beds and mangrove strands of the bay are known to be spawning and nursery grounds for commercially important fish and shrimps. Dredging and landfilling in Tarut bay are undoubtedly reducing the extent of the seagrass biotope, with unknown consequences for the total marine ecosystem or the sustained yield of local fisheries. Some of the last stands of mangroves are located in Tarut bay and some have already been eliminated by landfilling. Mangrove strands help to form a complex ecosystem since the roots of these trees trap sediment and provide a habitat for many minute organisms during all or part of their life cycles. Mangrove strands also supply a unique biotope for specialised macro-invertebrates and fish. Clearly, when their habitat and communities are covered by landfilling, these creatures are lost forever to the marine ecosystem. Landfilling consequences may also stretch far beyond the area of immediate impact because of effects on water flow patterns, levels of salinity,

temperature, oxygen supply, the suspension of sediment, increases in turbidity, and the possible release of sediment-bound toxicants.

As a result of land reclamation from the seabed, the size of Tarut Island increased from 1 260 ha in 1958 to 2 850 ha in 1993. The alteration of the coastline has already eliminated many employment opportunities in prawn and lobster fishing and carries a similar threat to pearling activities. The long-term ecological consequences are yet to be studied. Landfilling has also resulted in blocking the flow of water and has slowed the natural flushing action, which can make the area more susceptible to water pollution. Because of tides and other water movements, litter and other material has spread along locations like Tarut and Al-Qatif. This can interfere with the movements of animals, such as turtles, across beach areas.

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