STATE OF QATAR
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SOIL RESEARCH SECTION

PROGRESS REPORT FOR THE NATIONAL REPORT OF THE STATE OF QATAR ON THE UNCCD IMPLEMENTATION

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CONCERNING THE UNCCD IMPLEMENTATION

1. Introduction

The State of Qatar has early shown interest, serious concern on the effects of desertification and has consciously observed and/or attends the different efforts paid by the International community (countries and organizations) towards the development of CCD and its subsequent activities and very positive progresses. Joint action is indeed felt by the policy and decision makers in the Sate of Qatar as very highly needed in order to combat desertification and/or mitigate the effects of drought.

The country has experienced a fast and a vast socio-economical development in the last few decades as a result of its high oil revenue. This was early also accompanied by anxious and great interest in exploring, supporting and investing in the other natural resources. Land and water resources are no exception. Although agricultural production output is very low (only 1.1% of the total GDP). Yet very significant increases in aspects like, cultivated area of several groups of crops, number of farms, productivity indexes, livestock numbers and in area irrigated were achieved.

As a consequence to both the said socio-economic changes and the imbalances of accompanying intensive and extensive management activities in the field of natural resources, now desertification became manifested in several aspects. Declining in both quantity and quality of water and land resources and vegetative cover are now very well realized and established.

The efforts of the previous joint projects with the UN organizations and the national governmental bodies presently existing such as (i) Department of Agricultural and Water Research (ii) Department of Agricultural Development (iii) Department of Environment - all under the umbrella of the Ministry of Municipal Affairs and Agriculture are notable. They brought-in awareness, facilitated many relevant strategies, policy activities and achievements which directly or indirectly stream-in the local combating desertification efforts taken and/or to be taken at the national level. Some levels of participatory and consultative actions are going on, but they wait for more support and strengthening.

This draft report is made as an attempt towards the preparation of the national report on implementation of the UNCCD. It may be seen among some other resources as a baseline information source in order to assist measure whatever changes that might take place. Changes are expected due to the implementation of the future plans towards combating desertification in the State of Qatar. Such future plans are expected to be drawn up within the broadlines for the NAP outlined herein.

2. Background and Rationale

2.1 Geographic and Natural Resources Background

The Qatar peninsula is extending from the main land mass of the Arabia in northward direction into the Arabian Gulf. Its total area is about 11,610 Km^2. The peninsula is 180 Km along its north-south axis and the east-west widest point is about 85 Kms. The terrain is generally low and flat to wavy. Highest altitude of about 100 m occurs in southern Qatar, where rocky hills and sand dunes are found.

Climatic conditions in the State of Qatar are hot, arid, with scanty rainfall, hot dry summer winds and high relative humidity as usually experienced for the greater part of the year. Average annual rainfall and temperature are 31.3 mm and 27.5^oC, respectively, for the capital Doha.

The Physiography permits the development of limestone young colluvial deposits into dominant arable soils. These soils which are locally known as rodah (depression) although limited in area (27,620 ha) and constitutes only 2.44% of the total country area, are considered to be the best arable and productive soils in the country. The fact that they are scattered in over 850 depressions of few hectares to 60 ha sizes may comprise a limitation towards any very wide farming approachments. Their profile depths are also variable ranging from 30 to 150 cm. Next in importance is the sandy soil association which covers a total area of 36,157 ha. They exposure shallow to very deep sands and also includes sand dunes. A small portion of sandy soils are excluded from arable soils due to very high salinity (adjacent to shore lines), meanwhile the major part (31,392 ha) sublimates with the previous rodah soils to constitute the total arable land (65,000 ha; 5.6% of the total area). The extremely dominating very shallow (< 22 cm depth) rocky soils (958,072 ha; 82.44%), hilly outcrops (62,975 ha; 5.42%), sabkha saline soils (70,100 ha; 6.06%) and the previously said to be excluded sands

(4,775 ha; 0.42%) are all considered as non-arable soils. Some were even seen to be permanently non-arable.

The vegetation cover is generally sparse and is comprised of herbaceous plants, dwarf shrubs and very few tree species. No forests or pastures in the senses of well established meanings for the terms exist. The pastureland is of poor one and was estimated to cover about 50,000 ha with an annual estimated dry matter production of 5,650 tons.

The primary source of fresh water in the country is ground water (2500 millions of cubic meters). About 98% of ground water withdrawal (amounts to 244 million cubic meters in 1997) is made for agricultural purposes creating an imbalance between the sustainable supply and demand, which also resulted in both an annual deficit (39 million cubic meters) and an accumulated deficit in the range of (1000) million cubic meters. The annual recharge by the seasonal rains was also estimated at 54 million cubic meters in the same year (1995). Wastewater reuse was estimated at 25 million cubic meters. The country consistently depend on desalinization of sea water (92 million cubic meters) to meet all of its domestic and industrial demands for water. Hence, the total estimation of water resources was estimated at 2618.35 million cubic meters. Surface fresh waters are deadly lacking very scarce and if ever any, they are only short-period rainfall poundings in depressions, wadis or runnels.

2.2 Demographic and Socio-economic Background

The total population was 546,378 (1996) where non-nationals constitute its major portion (74.8%). The majority (90% in 1990) live in urban areas, specially the capital Doha.

The country enjoyed the very high revenues of oil production and it is now one of three natural gas producers in the world. The expected increase of natural gas production in the coming years should bring more prosperity and development to the nation, in addition to the already dramatic socio-economic changes that took- place during the last few decades.

2.3 The Environmental Profile

The very poor ecosystem of the country is mainly suffering from:

- Scarcity in fresh ground water resources, their depletion due to very high imbalance withdrawals under practice and the consequent deterioration in their qualities (high salinity);

- Harsh climate which leads to over-irrigation and its coincidence with other in-efficient irrigation, poor production management practices, consistently in use; and the resultant land degradation (farm abandonment).

- The high toll of socio-economic developments on the delicate sparse vegetation, coupled with the very relative effects of overgrazing and changes in nomadic pasturalism and weed-cutting traditions;

- Wind desertification mainly in the sand dunes area of the south and adjacent pasture and agricultural lands (170,000 ha). Also shallow-profile soils (approximately 136,000 ha) are said to be susceptible to water erosion due to the occurrence of erratic rainstorms.

3. The Development of the Agricultural Sector in Qatar

3.1 Strategies and priorities established within the framework of sustainable development plans and/or policies

Agriculture in the State of Qatar was confined to a few farms and date gardens during the period prior to the late 1950s. From about 1958 onwards the number of farms increased steadily to reach a total of over 1300 by now. The starting strategy could now be seen as was to discover and survey the extend and geographical distribution of advantageous natural resources to development, and to undertake necessary steps to exploiting them for the benefit of the country's natives.

Since, the natural resources in relation to agriculture (land and water) are very scarce (Section 2.1), therefore expansion in agriculture had very early - and as early as 1967 - placed a considerable strain on the existing groundwater resources. In that year, the total abstraction was estimated to have exceeded the normal recharge from rainfall. At that time also, however, there was very little hydrological or any other data to relay on in making any reliable assessment to show the extent of such probable over-exploitation.

The government sought technical assistance and a project known as "Hydro-agricultural Resources Survey" was initiated with the assistance of the United Nations Development Programme (UNDP) and the Food and Agriculture Organization of the United Nations (FAO) in late 1971. The outcome was a generation of foundation information in the fields of hydrological and land resources, besides some limited horticultural trials.

A second project "Integrated Water and Land Use" followed in mid 1974. It has been undertaken by the Ministry of Industry and Agriculture with collaboration of the Water Department of the Ministry of Electricity and Water and increased technical assistance by UNDP and FAO. Between 1974 and 1977 this second phase project carried out a wide range of observations, investigations, experiments, trials and special studies. The result was a modernization, expansion, further evaluations, accurate definitions and determination to some important water resources aspects. In the agricultural side horticultural trials and the introduction of new varieties was emphasized. Irrigation practices, soil management studies, improved management techniques were all undertaken. A survey on farm management and production to facilitate with basic data on farming systems of Qatar was also made. Work into controlled-environment greenhouses, as well, was initiated.

The third project "Water Resources and Agricultural Development" to intensify the above investigations, particularly in the light of results which clearly showed high potential for agricultural production under improved practices wad decided by the Government of Qatar. It was initiated in July 1997 with continued assistance of FAO experts. Objectives were put in detail in the view of implementation of proposals and recommendations arising from the previous project. At this stage self-sufficiency and food security strategies and policies due to political and economical instabilities in the world were starting to grow. It was understood that Qatar is one of the countries that make up a region that has a large food deficient. Increments in oil prices and the accompanied demographic or socio-economic transformations and the very significant oil domination of the national economy leads to anxiety by the government to diversify the economy. Provision of support inputs and services also found much of their rationale due to the adoption of a combination of the above strategies and to policies relevant to their execution. By the end of the third project it was clear that limited choice of options were open to the Government in

developing agriculture and that the attainment of complete self-sufficiency in foodstuffs is not a practical policy. An outline of a plan for urgent consideration was consequently suggested which provided for raising the level of production of all suitable crops. Cereals and sheep rearing were excluded due to high increase in water requirements and to the inherent, very high and certain cost element. The undesirable necessity of basing the whole agricultural sector on a very high proportion of distilled water was also argued in regard to the previous recommendations. The combined need to buildup and extend agriculture on socio-economic feasibility and environmental measures could be seen to originate from those recommendations, made by the third project. Extension in order to create a general awareness of the need to water and land conservation was clearly recommended. Rational subsidies and a call on the private sector to play the major role in agriculture were emphasized.

The previous strategies and policy priorities continue after the natural evolving of the Department of Agricultural and Water Research (DAWR) as a natural extension to the three preceding projects in 1982. It continued the same trend of investigations and studies. The government also continued and expanded the policy to render support and services to the agricultural sector. Services are mainly provision of machinery, some seed, seedlings, pesticide requirements, research, extension, laboratory analysis and veterinary. Support in the field of marketing had been made, since (1991) and cash funds support was also discussed.

In (1990) the Government's responsibility towards the agricultural sector was split and reorganized through the establishment of two sister-departments viz. The Department of Agricultural Development and Department of Fishery Wealth. Three other departments in relation to the agricultural sections were also established within the same ministry viz. (i) Department of Environment Protection, (ii) Department of Lands and Confiscation of Ownership, (iii) Sections of Gardens and Public Parks attached to municipalities.
By this, the government was able to cover most of the agricultural section's aspects. A consultancy review (1994) has shown that most fields were directly addressed in this finally decreed reorganization. The deficiency covers areas of making the general governmental policy for agriculture and its implementation; facilitating, organizing and supervision of marketing operations for the agricultural products; and securing necessary funds through favourable terms and conditions to the agricultural sector. The agricultural sector was required since that date of the said consultancy and till the present to qualify as:

1. An agricultural sector, which should generate an increasing portion of income (in order to diversify the country's economy) through a developing agricultural production, based on economic efficiency and competition and should at first class be oriented towards the local market.

2. An agricultural sector, which should be based on environment protection and conservation of natural resources, especially water, land and vegetation cover as a basic stipulation for any development or investment.

3. An agricultural sector, which should compose a part of an approved, integrated economic and social development in the rural areas.

4. An agricultural sector which should have a share in enhancement of the general natural environment in the State; in order to facilitate favourable residence and investment through the expansion of the green area, hindering of desertification and expansion of public gardens, natural parks, natural reservations, ornamented roads etc.

5. An agricultural sector which should not constitute a continuous burden on the government's budget.

It was felt necessary to review all the policies of water supply, demand, allocation and conservation management in accordance to the above goals. Water policy was and will continue to be viewed as the backbone for any agricultural policies and priorities in the State of Qatar. Plant and animal production measures were also set forward for revision in order to cope up with the above broad goals. Continuation of regional and international liaison and coordination was thought very necessary in regard of the above goals.

The strategy to combat desertification as recently thought and believed is based on sustainable development and by building the nation's capacities. The main elements and scopes as stated in the country's Agenda 21 as broad lines for a work plan are as follows:

1) Lands which have not yet been degraded or currently under slight degradation must be put under precautionary measures.
2) Strengthening institutional frameworks and promotion of policies that may encourage and facilitate access to information and appropriate technologies.

3) Strengthening weather forecasting and climatic studies efforts.

4) Drawing plans for drought impact studies. These include sustainable income generation options in the drought stricken areas.

5) Developing sustainable irrigation programs, especially those using non-conventional water resources.

6) Setting out warehousing and marketing facilities for food in rural areas.

7) Provision of appropriate technologies and training for agricultural and pastoral activities in a way compatible to modern socio-economic circumstances.

On the other hand, future and long term plans were thought to cover (but not to be restricted to) the following points:

1) Compiling a desertification map for the State of Qatar.

2) Monitoring desertification, which occurs through land degradation due to secondary salinization, decline in both the quantity and quality of groundwater and desert or sand dune creep.

3) Surveillance of human behaviour in the vulnerable environment.

4) Enhancing the development of water resources, specially the recharging of groundwater.

5) Legislating for restriction of overgrazing and prevention of desertification that occurs for natural pastures.

3.2 Implementation of the Agricultural Development Policies

The following Table (1) shows the implementation of the combined policies that were thought as to fulfill the requirements of the many strategies portrayed and outlined in the context illustrated in Section 5.1.

The net productivity index for agriculture for a twenty-year period (1980-1999) reflects a combination of increase in area or number of agricultural industry and enhancement in productivity. It shows

approximately 260% and 300% increase in agricultural productivity for the periods 1980 to 1990 and 1990 to 1999, respectively. Areas cropped by different crops, area irrigated in general and numbers of all kinds of livestock had all increased as could be noticed during the said period (20 years).

Table (1) Implementation of Agricultural Policies in the State of Qatar as drawn from FAO Statistics

Parameters	Years		
	1980	1990	1999
1. Net Productivity index (NPI)	36	95	286
2. Area planted to crops ('000 ha)*			
a. Vegetables and melons	1.3	2.2	2.8
b. Cereals	0.2	1.1	1.7
c. Fruit (including dates)	1.4	2.1	3.6
3. Livestock numbers (000's)			
a. Cattle	9.9	10.1	13.9
b. Sheep	45.9	130.0	205.0
c. Goats	55.5	97.6	175.0
d. Camels	10.3	26.8	47.0
4. Area irrigated ('000 hectares)	3	6	13

*Productivity index is based on 1989/91 production data
Extracted from: Strategic Plan 2000-2004 (draft), Biosaline Agric. Centre, Dubai, U.A.E.

3.3 The institutional measures taken to implement the convention

It is widely believed that many of the socio-economic and environmental challenges, which the State of Qatar is facing, are related to desertification. The declining natural resource base pops-up strikingly. Therefore, the country has ratified to participate in the convention in August 1999 as per the Amiri Decree No. 29 for the year 1999. Prior to that the Head of the Soil Research Section of the Department of Agricultural and Water Research was assigned to coordinate and liaise all activities relevant to desertification at all local, regional and international levels. He is also enjoying the participation and assistance of the Assistant Director for technical and supervision affairs of the Department of Environment. Both departments are affiliates of the Ministry of Municipal Affairs and Agriculture, which

undertakes the mandate of combating desertification, within the entire responsibility towards agriculture and environment.

The national coordination activity of desertification is still in its very infant stages. It has no financial autonomy, separate human resources and logistic or independent entity organization. Even though, most activities could successfully be carried through the very powerful cooperation and harmonic element existing within the Ministry and with other bodies such as the university and its research centres.

Information capacity for the existing national coordination body lies within those currently in possession by the relevant government departments. No certain comprehensive databases would have been referable at this point. Other data resources such as reports, books and research studies are vastly available, systematically kept and are very easily accessible. An information centre had been formulated which started and still in process of acquiring all information necessary for agricultural development in some sorts of databases.

The above mechanism for coordination was not reviewed or analysed - Coherency with other environmental strategic and planning frameworks seems to be more likely observable. Since all of the same should be approved and set for implementation by a unique authorization at the highest ministerial level. Greater involvement and responsibility of local population is thought very likely after the Amiri endowment of the establishment of the first voted Municipal Council (1999). The department of agricultural and water resources is normally encouraging local population and enhance their participation in all activities taken by its various sections through agricultural extension efforts among farmers. It also realizes the importance of agricultural mass communication, which was indicated by the very recent appointment of a Mass Communication Specialist. Efforts to raise awareness in all agricultural and environment aspects are increasingly continuing.

3.4 The participatory consultative process in support of the preparation and implementation of the action programme

No detailed action programme directly addressing the issue of combating desertification was yet prepared and set forward for implementation, only a very preliminary combination of broad lines of thematic nature is suggested as set in Section 5.2. The precise identification and integration of all national stakeholders and national

association contributions may seem to suffer some deficiencies as far as the current mechanism of tackling the issue is concerned.

The respond and representation of the government in regional and international relevant events are now undertaken very actively. The government expects to share experience and benefit from such participation in evolving strengthening and implementation of its relevant national programmes.

3.5 The measures taken or planned within the framework of the existing programmes

Since no action programme has yet been formally approved, therefore we can only mention those of relevance to desertification as undertaken or planned by the agricultural and environment departments of the Ministry of Municipal Affairs and Agriculture. The following could be viewed to have direct relevance to the subject, and might well be integrated in the NAP: -

1. Desert plantation (afforestation), undertaken by the Soil Research Section of DAWR (Department of Agricultural and Water Research).

   They are small areas selected in rocky desert and saline coastal regions. They are typically fenced, hole-dug and seedlings of a wide variation of tree species are brought, planted and supported with irrigation. After reasonable establishment they are left to survive natural conditions. The Project is existing and continuing.

2. Distribution of tree-species seedlings, undertaken by the Department of Agricultural Development:

   Thousands of seedlings of wind breaks and ornamental plants are yearly distributed all over the country. The project is aging but still very successfully continuing.

3. Routine farm soil surveys undertaken by the Soil Research Section of DAWR:
   This programme has a key role in showing the extent and character of soil degradation as long as abandoned farms would have to be included in the programme.

4. Routine meteorological measurements undertaken by the Water Research Section of DAWR:

The project facilitated the baseline data needed and will continue provision with a bulk of a very essential data.

5. Routine monitoring and assessment of hydrological aspects and water analysis:

   A number of projects undertaken by the Water Research Section of DAWR carried on a network of wells was and will remain to be a backbone source of a very important information on water resources.

6. Monitoring of chemical pollution undertaken by the Central Agricultural Laboratory of DAWR.

7. The production of date palm seedlings through tissue planting techniques, undertaken by the Plant Tissue Culture Laboratory of DAWR.

8. The study on abandoned farms by the Water Research Section of DAWR

3.6 Financial allocations from national budget

All of the above projects receive annual budgets and renewal of budgets to cover the entire timetable made for them. Budgets are subject to rescheduling and reduction for the last 2-3 years due to crises in oil prices and their reduced subsequent government revenues. Any workplans to be developed in regard of combating desertification are likely to receive financial allocations through the national budget as long as they very efficiently address the problem and fitting well within the government's priorities. Other current resources and assets in the possession of the relevant departments are also availed for sharing within the well established practices followed with all projects belonging to each specific department. Technical support on the other hand can be requested whenever necessary. Convincing approaches always receive government support.

3.7 Progress and Assessment

The national programme to combat desertification was not yet formally and coherently formulated. Any such a formulation must necessarily show benchmarks and indicators to be utilised in measuring progress and assessment. The technical support in obtaining a suitable

information system on desertification at the national level should be attempted. This will help hold the current data and will facilitate the necessary feedback latter during the implementation stages. Regular production of relevant reports must also be adopted in a serious manner. Environmental monitoring and capacities to be undertaken are the backbone in this regard.