



Editorial

Dear Readers,

Welcome to edition 11, the first edition of the new millennium. PERSGA has been through a very busy period. There have been Workshops and important progress made towards completing the protocol on the Protection of the Marine Environment from Land-based Sources of Pollution. Preparations are also being made for the protocol on Biodiversity and the Establishment of Protected Areas.

Within the Strategic Action Programme, in addition to three Working Group meetings these past few months have been characterised by the essential processes of planning and preparation. There has, as a consequence, been an apparent reduction in the visible output. This is an illusion; it is the calm before the storm. Insufficient time spent on planning and budgeting can lead a project into troubled waters. This is a prospect we intend to avoid if at all possible.

One of the difficulties for an editor preparing a newsletter is locating sufficient graphics to run alongside the text. I know you don't want to read all the words, - you just want to look at the pictures! That's human nature. I am therefore sending out a request for pictures - all sorts, 35mm slides, prints, colour or black & white, so long as there are no copyright problems associated with using them in *Al Sambouk*. All personal material used will be credited to the original supplier. Do you want to join the ranks of famous underwater photographers? Send in your favourite fish or marine invertebrate. Have you got some good coastal shots, or views of marine protected areas, coastal waders, seabirds,

mangroves, or pollution incidents? All donations will be gratefully received. Originals will be returned once we have scanned the picture and created an electronic file. We will also send you a copy of the file, by email, so you can post the picture on your own website.

Dr. Dirar Nasr & Roderick Fleming (Editors)

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Mr. Ahmed Daoud



Ahmed Daoud has been the Finance and Administration Manager for PERSGA, here in Jeddah, for the past eleven years. He arrived from his previous posting in Somalia in 1989 and has faithfully served the organisation ever since.

Sudanese by parentage, he was brought up and educated in Cairo, where he received both elementary and secondary schooling. In the early 1970's he moved to Khartoum and studied in the Faculty of Commerce at the Khartoum branch of Cairo University, graduating in 1977. Alongside his studies he worked with Sudanese government television in the News Department at the Ministry of Culture and Information.

Following graduation Ahmed Daoud joined ALECSO, the Arab League Educational, Cultural and Scientific Organization, and served in several of their branch offices, in Egypt, Sudan and then in Somalia. During his time in Mogadishu, which extended over more than five years, he also supervised activities at the 'Institute of Arabisation for Administrative Affairs' and taught courses on 'mathematics for finance', writing a book on the subject. Readers of the local newspaper 'October Star' may not have realised that Ahmed Daoud regularly edited the page on education and culture.

Not one to "let the grass grow under his feet" Ahmed has, throughout his career, maintained an interest in pursuing further education. He was awarded a Diploma in Economics from the Islamic University of Omdurman in 1984 and is currently registered as an MSc student at the Arabic Academy for Science and Technology in Alexandria.

In 1989 when Ahmed moved to PERSGA in Jeddah he retained his link with ALECSO as

PERSGA operated under the umbrella of the Arab League at that time. The financial and administrative duties involved in running PERSGA have been his responsibilities ever since.

Ahmed Daoud is married with two daughters and two sons. His interests and hobbies include reading and boxing. We had better treat him with a little more respect in the future or we may find that he too can "dance like a butterfly and sting like a bee..."

Training Course in Sea-level Observation and Data Analysis

In the framework of joint projects between PERSGA and ALECSO, a regional training workshop was held at the HQ of PERSGA over the period 15-19 April 2000, on Sea-level Observation and Data Analysis. It was organised by both PERSGA and ALECSO in co-operation with IOC, MEPA, and Saudi Aramco.

The training course was opened by Dr. Mohamed Abdulrahman Fawzi, Deputy Secretary-General of PERSGA. He welcomed the participants and gave a brief account of PERSGA's activities in regional capacity building for the conservation of marine and coastal areas.

Fifteen specialists participated in this Workshop from Djibouti, Jordan, Saudi Arabia, Egypt, Sudan, and Yemen in addition to the representative of ALECSO. Lectures were given by Mr. David Dixon, IOC consultant, and Dr. Mohammed Ayoub from King Abdul Aziz University in Jeddah - in English and Arabic respectively. The lectures concentrated on 'Theory of Tides, Modern Tide Gauge Systems,



David Dixon lectures to the participants

Analysis of Observed Tidal Data, POL Task Program for Data Analysis, and the Levelling of Tide Gauge Benchmarks. Participants also gave presentations on the status of tide gauges and data analysis in their countries.

A field visit took place to Saudi Aramco where operational tide gauges were inspected and where two staff members gave an explanation on their operation and the data analysis. The speakers used computers and PowerPoint presentations to train the participants on the use of modern programmes prepared by IOC.

The evaluation of the Workshop, as done by questionnaire and distributed to participants, showed that the workshop was very successful. The participants were well satisfied the level of the speakers, the benefit they gained from the field-visit and use of training equipment, and the documents provided by the workshop. It was the consensus of PERSGA and the participants that an expert should visit the Tide Gauge system in all the PERSGA countries and evaluate the system.

It should be mentioned that IOC covered the expenses of the consultant while PERSGA and ALECSO covered the expenses of the other participants. At the end of the Workshop Dr. Al Bahlool Al Yaqoobi, the ALECSO representative, distributed certificates to the participants and expressed his satisfaction with the success of the course.

Signing of a Technical



Mustafa Fahmi from Leica explains the use of levelling equipment

Agreement between the Islamic Development Bank and PERSGA

Upon a request from PERSGA, the IDB have kindly agreed to provide a technical assistance grant of USD 448,850. The agreement was signed on 8th March 2000 in the IDB Headquarters. His Excellency Dr. Ahmed Mohammed Ali (President of IDB) signed on behalf of the Bank and Dr. Nizar Tawfiq (Secretary-General) signed on behalf of PERSGA. Among the witnesses at the signing ceremony were Eng. Mahmoud Al Kushman from the Bank, and Dr. Dirar Nasr and Mr. Carlos Haddad from PERSGA.

Between PERSGA and CEDARE

In mid April an opening ceremony was held for the Headquarters of CEDARE in Cairo, under the patronage and in the presence of Mrs. Susan Mubarak, His Highness Emir Fahd bin Abdullah Al Saud, and Dr. Atif Obaid. Dr. Nizar Tawfiq, Secretary-General of PERSGA, also participated in the opening ceremony. The new Headquarters receives funding from Egypt, the Arabic Fund for Economic and Social Development, and UNDP.

The CEDARE centre aims to promote coordination and cooperation, between Arabic and European efforts to protect and conserve the marine environment. It aims to help with the implementation of relevant projects and also to assist countries in the region in capacity building when facing environmental problems. This may be done through feasibility studies for environmental protection activities and through agreements for cooperation with national institutions and organisations in the region.

A joint cooperation agreement was signed in Cairo between PERSGA and CEDARE in July 1999 under the patronage of the Government of Custodian of the Two Holy Mosques. It was agreed that cooperation would take place in the implementation of a programme for the

protection of the Red Sea by safeguarding navigation.

The PERSGA staff send their congratulations and best wishes to CEDARE.

The Strategic Action Programme

Management Training Course

The staff at PERSGA, including the Strategic Action Programme (SAP) Coordinators from Sudan, Yemen, NE & NW Somalia and representatives from UNDP in Riyadh, took part in a five-day Management Training Course from 16-20 January. The course was delivered by an international management consultant from the University of Bradford, UK and concentrated on techniques for project analysis, planning, and communication. It was appropriately slanted to meet the needs of PERSGA and the SAP by Dr. Abdul-Majeid Haddad (SAP-UNDP Coordinator), who effectively customised the course for the target group by selecting suitable case studies and linking the theoretical concepts to the reality of the project components currently under development.

The course was very successful. It explained the processes involved in project identification, planning, implementation, monitoring, and evaluation and it taught the specialised techniques of the Logical Framework Approach, Network Analysis, and Work Breakdown Structure as well as touching upon the psychology involved in hiring and evaluating consultants.

The course was followed by a two-day "retreat" held at tourist village on the outskirts of Jeddah. This was not a time for play, though we did get a free ride on the space simulator in the evening, but an opportunity for the group to meet and discuss, in an informal setting, the methods of project implementation and the lines of communication. In fact it was the first time that the entire SAP project team (minus the two Lead Specialists for Navigation Risk and Public Awareness) had had the opportunity to meet together as a unit.

The complexity of the SAP was addressed and a detailed SAP communication chart, showing

how information should flow between the personnel and organizations, was prepared. It demonstrated how the project interacts at national, regional and international levels.

Field Visit to Yemen

During the period 6-20 December 1999, three SAP Lead Specialists made a two-week trip to Sana'a, Aden, and Mukalla in the Republic of Yemen. The visit was efficiently organised by the SAP National Programme Coordinator Dr. M. Abubakr and the Environment Protection Council (EPC) of Yemen. The fortunate-three included Drs K. Hariri, (Living Marine Resources), R. Batayneh (ICZM) and Mr. M. Younis (Marine Protected Areas). They held several meetings with officials from the ministries expected to be involved with the implementation of the SAP, together with local Working Group Members and representatives from two NGOs concerned with environmental protection.

Initial meetings were held in Sana'a. Here the SAP Lead Specialists were able to introduce their components to several key officials. These included HE Eng. Mohsen Al Hamdani (Chairman, EPC), Mr. M. Saghairy (Deputy Minister, Ministry of Fish Wealth), and Mr. Abdel Rahman Mahyoub (Chairman, General Tourism Authority GTA). Future plans for ICZM pilot projects, the establishment of a National ICZM Working Group, training in Environmental Impact Assessment as a planning tool, fisheries stock assessment, catch sizes, and data collection methods were all reviewed.

The SAP team proceeded to Aden where they spent the following four days. Presentations on the SAP and useful discussions took place with Dr. Jamal Lawzi (Director, EPC Aden), Eng. Wahid Ali Rasheed (Deputy Governor, Aden), Mr. Omar Subaih (Director General, Fisheries Project IV), Mr. Mohammed Musa (Director General for Aden Municipality) and Mr. Abdullah Abadan, (Deputy Minister - the Ministry of Planning and Development, Aden).

The team visited the Fisheries Training Institute (FTI) and the Marine Sciences and Resources Research Center (MSRRC), together with the Mariculture Research Center and the Marine Pollution Center. One objective of the visit was

to assess their potential future use as regional or sub-regional research and training centres for the study of Living Marine Resources.

In Mukalla the SAP Lead Specialists met with Mr. Mohsin bin Shamlan (Deputy Governor) and Mr Awad A. Hatim (Deputy Governor for Coastal Affairs) and were informed about the key challenges facing the area which include the control of rapid coastal development, improper sanitation, uncontrolled fishing and poaching of turtles.

Back in Sana'a, the trip was wound up with two more days of meetings. Mr. M. Abdelraheem (Director of the Environmental Information Department, EPC) discussed use of GIS and the need to upgrade the current Archview software and train more personnel.

Further productive discussions were held with Eng. Ahmed H. Odaini (Vice Minister, Ministry of Construction, Housing and Urban Planning),

Aden and the Arish area near the Aden-Mukalla highway where a sewage treatment plant is under construction. In the Mukalla area the team had site visits to Bir Ali fishing community centre and to the Sharma and Jethmun turtle nesting grounds. The former area has been declared as a Marine Park but the decision is not yet operational. Both sites are to become pilot sites for a project funded by GEF on integrated coastal zone management.

The meetings with the officials in Yemen ensured a common understanding of the anticipated role of the SAP in coastal management. Emphasis was placed on the regional coverage of planned activities. It was agreed that the facilities available at the Fisheries Training Institute and the MSRRC in Aden would be used for sub-regional and regional training activities in the field of Living Marine Resource Management. The necessary support, in terms of equipment, material, and



View of the crater at Khor Shoran (Bay of Mangroves) near Belhaf-Bir Ali

Photo by Mr. M. Younis

with Ms Najat Al Sahmi (GTA) and with Mr. Aktouf Bu Alam (UNDP Acting Resident Representative).

During the course of the visit to Yemen the SAP team were able to take part in a number of field visits to complement the numerous meetings. Site visits included a trip to the fishing community centres of Fuqum and Imran west of

specialists would be provided by the SAP.

Potential pilot sites for Marine Protected Areas and for ICZM projects were discussed. It was foreseen that the SAP would, wherever possible, fill gaps and complement current projects that have regional impacts.

Drs K. Hariri and R. Batayneh

SAP Working Group Meetings

The Working Groups (WG) for the SAP components have now been officially established and some of the first Working Group meetings have been held. These include:

- ICZM, Amman, 31 Jan- 01 Feb. 2000
- Habitats & Biodiversity, Riyadh, 12-14 Feb. 2000.
- Marine Protected Areas, Port Sudan, 26-28 Feb. 2000.

The Living Marine Resources Working Group is scheduled to meet in Aden at the end of April.

The ICZM Working Group Meeting divided its time between Amman and Aqaba. The meeting in Amman was opened by Dr. Suliman Jaafri the Director-General of the General Corporation for Environment Protection (Jordan). The SAP and the ICZM component were presented to the WG participants. The participants then gave an outline of their experience with ICZM in their home countries. Capacity building for Environmental Management, the environmental impacts of waste-water treatment plants, the use of GIS in managing protected areas, and coastal zone management in Aqaba were discussed.

The WG Members then travelled to Aqaba where they had the opportunity to tour the coastline of Jordan to see the interaction between the land-use planning system and current conservation measures. A visit to an industrial pollution control facility, a wastewater treatment plant, and the Aqaba

marine science station took place.

The Habitats & Biodiversity WG met at the Headquarters of the National Commission for Wildlife Conservation and Development, Saudi Arabia, hosted by H.E. Prof. Dr. Abdulaziz Abuzinada. The meeting took place immediately after the International Workshop on Coral Reef Bleaching. The WG meeting concentrated on an exchange of information about the formulation of the SAP with special emphasis on the Habitats and Biodiversity component. The WG suggested that the plan for the year 2000 should concentrate on 'capacity building' and the 'conservation of key habitats'.

The Marine Protected Areas WG met at the Sea Ports Corporation Training Centre in Port Sudan during the period 26-28 February. The director Eng. Hamza El Fadhlabi gave a welcoming address, and Dr. Abdel El Gader Daff Allah gave a short presentation on the Role of Protected Areas in Marine and Coastal Zone Conservation. Dr. Abdul Majeid Haddad (UNDP) introduced the Strategic Action Programme as a whole and Mr. Mohammed Younis (SAP Lead Specialist) outlined the important role each Member would play in helping to establish a network of representative marine protected areas. Each Member then gave a short presentation on the status of MPAs in their county.

On the last day everyone set out on an expedition to Sanganeb Atoll Marine National Park. Unfortunately the weather was so bad and the sea so rough that the trip had to be abandoned on safety grounds!



The Marine Protected Areas Working Group meets in Port Sudan.

The photo includes the National Programme Coordinator and representatives from:

UNDP

The Red Sea University

The Sea Ports Corporation

IW:Learn Programme

Train-Sea-Coast

Private sector tourism operators

Photo by Mohammed Younis

Editorial and Translation Assistance

Back in February PERSGA/SAP advertised for editors and translators who would like to have their names included on a list, or roster, of consultants. We would then contact them on an as-needs basis to help out with work in times of peak activity – i.e. most of the time.

The editor foolishly agreed to act as the focal point and spent the best part of a week underneath a pile of 250 application forms that sat 20 cm high on the desk. Image reading a book that thick, it makes *War and Peace* look easy! Having completed the task we now have our rosters complete and the editor begs you not to send any more applications to him. We do regret that, because of the number of applicants, it is simply not possible to write to all those persons who were unsuccessful. We would like to take this opportunity to thank everyone that showed interest in the organisation and took such care in the preparation of their letters and c.v.'s. Some very well qualified candidates came forward.

Arrival of the Lead Specialist for Public Awareness and Participation

We are more than happy to announce that the Lead Specialist for Public Awareness and Participation - Ms Khulood Tubaishat - has arrived in Jeddah. We all offer her our warmest welcome.

Conferences

BirdLife International

Abdullah Alsuhaibany, Lead Specialist for Habitats and Biodiversity, a well-known and highly respected Saudi Arabian ornithologist attended the BirdLife International Conference in Kuala Lumpur between 9-18 October 1999. The primary objectives of the trip were to establish communication between BirdLife

International and PERSGA, and to discuss future coordination and cooperation between the two organisations, especially in the field of capacity building and public awareness.

Meetings were held with the regional representatives of BirdLife International (Middle East & NW Africa) where current strategies – notably the Middle East Regional Programme - were discussed and reviewed.

The trip proved valuable in establishing contacts and setting up a coordination mechanism to avoid overlap in existing and future projects. As BirdLife International already has considerable experience in the field of developing public awareness programmes, a useful link can be made with the SAP Lead Specialist for Public Awareness.

Abdullah Alsuhaibany

An International Workshop on the Impact of Coral-bleaching in the Arabian Region

An international gathering of coral-reef scientists, managers and representatives of global and regional environmental organizations took place between the 5th – 9th February 2000, in Riyadh. The objectives of the meeting were to assess the affects of the 1997/98 coral-bleaching event in the Arabian region and to set out the scope of a Regional Coral Reef Action Plan.

The Workshop was hosted by the National Commission for Wildlife Conservation and Development (NCWCD) in collaboration with PERSGA and ROPME. The meeting was supported by UNDP, UNEP, ROWA, and the World Bank. A number of international flight tickets were provided by *Saudia* and the IDB.

During the first three days, status reports were given by representatives from nearly every country in the region. Further presentations covered the regional extent of coral bleaching, other threats to coral reefs, and coral reef monitoring programmes.

Many participants felt that the workshop had provided a unique platform for the exchange of information between the members of international coral reef programmes such as the International Coral Reef Initiative (ICRI), the

Global Coral Reef Monitoring Network (GCRMN) and ReefCheck, and the scientists from the Arabian region.

Recommendations were made by working groups on key issues such as ICZM (legal and institutional aspects), marine protected areas, monitoring, research and socio-economic assessments, capacity building, education, training, and the economic valuation of reefs. These recommendations have been compiled into a draft Regional Action Plan which will be circulated to the Workshop participants for comments and further refinement. The final version will be consistent with other Regional Action Plans prepared under the umbrella of the International Coral Reef Initiative (ICRI).

The results of the meetings will be made available in a set of Workshop Proceedings.

Helge Vogte

Articles

Living Marine Resources

Dr. Khaled Hariri, SAP Lead Specialist for Living Marine Resources, has provided a twenty-minute talk for students on the I.W.LEARN programme based at the Royal Holloway University in SW London. In the talk he highlights the most significant problems faced by fisheries managers in the region and outlines, in general terms, the role of the SAP in addressing them. An edited version of the talk is provided below:

Three water bodies are located in this region; the Red Sea, the Gulf of Aden, and the southern part of the Arabian Sea. All these waters form the western part of the Indian Ocean. Conventionally, they represent Area 51 in the FAO Fisheries Statistics Yearbooks.

The first problem confronting those involved in the management of LMR in this region, is the inadequacy, and sometimes the total lack of proper statistical records. In most countries of the region, the statistics on fish species landed by artisanal fishermen are very poor. Often the recorded catches do not cover all the landing sites and the quantities of each species caught

are not identified. The weights are, at best, rough estimates since they are recorded in the wholesale markets where fish sales are either 'by the bundle' - for small sizes - or by individual fishes if larger. No regular, seasonal sampling is made in order to determine the average weights and then to calculate, with an acceptable degree of accuracy, the total quantity landed for each species. Furthermore, records on fishing effort are incomplete. Existing records in some countries are simple registers of the fishing boats' main particulars, and the power of the engines used. There are no details on the fishing gear, the fishing grounds, or the fishing techniques. Changes in fishing techniques, or the introduction of new technology on board the vessel which may result in an increase of fishing effort, are not recorded. The problem of recording the total fishing effort exerted on the commercially important species is made more difficult by poaching carried out by fishing vessels from countries outside the region.

The second major problem is the lack of stock assessment studies. These are the cornerstones for management decisions. The last report on stock assessment studies of important species in the region was compiled by Dr. Sanders of FAO in 1998. Support for research activities from governments' regular budgets, or bilateral or multilateral funding sources has been meagre, despite both the scientific and the socio-economic significance of the LMRs. This region has all the coastal and marine habitats characteristic of tropical waters except for river estuaries. Such habitats include fringing coral reefs along the mainland coastlines, numerous islands, seagrass beds, and turtle nesting grounds. The upwelling phenomenon in the Gulf of Aden and the Arabian Sea during the monsoons, especially in summer (July-Sept.) when the S.W. winds prevail, enriches the primary productivity of those waters. The marine biodiversity and the percentage of endemism are high. There is still much work to be done in the field of taxonomic identification.

The geographic nature of the Red Sea, as a semi-enclosed sea and as an embryonic developing ocean, with coastal countries having opposite and adjacent narrow continental shelves, places the problem of managing transboundary stocks on the top of the list of priorities in LMR management. Highly migratory species deserve particular attention.

With the boom in the export trade of dried shark fins from countries of the region to the S.E. Asian markets since the early seventies, several shark species have become endangered. In addition, the use of non-selective and destructive gear for shark fishing in the region requires prompt management actions. The large increase in mid-water and bottom trawling for fishing shrimp, cuttlefish, deep-sea lobsters, and demersal fish species has resulted in the destruction of several benthic fishing-grounds. The decline in the stocks of the targeted species has endangered the lives of turtles and marine mammals, like dolphins and dugongs.

The third problem hindering the sustainable development of the LMRs is related to the weak and inadequate institutional and legal frameworks at the regional and at the national levels. There is no regional institution empowered with the authority to decide on fisheries management measures, based on fisheries management plans, which are then adhered to by the respective countries. Such a forum has been established in other marine areas for managing single or multiple species. Official decision-makers from governments participate in the forum, with advice from marine biologists and legal experts. Many of these bodies work in close collaboration with international organizations such as the FAO.

Another major problem affecting LMRs is pollution from land-based and sea-based sources. The region is an important international lane for the maritime transportation of oil, other goods, and people. The potential risks to marine life resulting from a major oil spill or a traffic accident are high. The demographic increase, and urbanisation in the coastal cities without proper ICZM plans, is increasingly causing negative impacts on coastal LMRs.

Finally, it is noticeable that the level of awareness concerning the need for immediate measures to mitigate the degradation of the coastal and marine habitats is low. This is not only common among the public at large, but also prevails among the officials in government.

There are a number of misconceptions regarding the nature of LMRs. For example, LMRs are considered correctly as renewable resources, - but frequently the term renewable is equated with the term 'unlimited' which is totally false. LMRs are renewable but they are also limited.

Overfishing a certain species may lead to its extinction or to a very slow recovery over a prolonged period of time. Another erroneous concept is that access to fisheries resources should be open and uncontrolled because of their 'common-property' nature. This false idea can lead to intensive exploitation in a short period, especially if the species fetches high prices in the international market and can result in a rapid and devastating decline of the species. The sharp decline in numbers and size of the rock lobsters caught from Gulf of Aden waters illustrates the case in point.

Another issue deserving particular attention in environmental awareness campaigns relates to methods of handling, preserving and transportation of fish and other fishery products. Quality control is generally poor in the region. It is not only the technology, equipment, materials and know-how that is required, but also a considerable amount of effort has to be made in order to change the behaviour and attitude of the people towards LMRs.

Interventions of the SAP through the LMR component

The main objective of the LMR component is to contribute to capacity building at the regional and national levels, in areas directly leading to the achievement of development outcomes which assist in the alleviation of the aforementioned problems. The structure of the SAP allows for dependence, right from the beginning, on regional and local experts to carry out the designed assignments with limited input from experts from outside the region. Specifically, it is envisaged that the LMR component will intervene to achieve the following:

- Standardisation of data collection, and the formation of a database
- Upgrading two sub-regional LMR research and training centres
- Development of a management plan for transboundary stocks, particularly for sharks
- Training of regional and national scientists on LMR species taxonomy, identification, stock assessment and management measures
- Improving regional and national LMR legislation

- Providing, on a pilot scale, selective and non-destructive gear for certain species
- Providing, on a limited pilot scale, small fishing boats, engines and fishing gear for some of the poorest fishermen

In addition, if sufficient funds are made available, the LMR component will contribute towards: managing stock assessment surveys, publishing a field guide for species identification, making a reference collection, developing quality control standards, and establishing an authorised, regional, LMR management forum.

Dr. Khaled Hariri

Women and Environmental Awareness

Women make up half of society; they are mothers, wives, daughters, sisters, teachers, and physicians. The role of women in bringing-up the new generation is an ancient one. However, scientific discoveries have led to the development of new technologies, equipment, and labour-saving devices. Many of these have become so common as to be considered the basic necessities of life. The natural role of the mother, to be restricted within her domestic environment, is no longer the same as it once was in the past.

The importance of the women's role in the family is quite clear. Her activities include her role as supervisor and teacher of children. She introduces to them environmental concepts through the things that surround them in their daily life. For example, she always give instruction in conserving the use of water, in not wasting electricity (turning off the air conditioning and the lights when not needed), and by ensuring that litter and refuse are put in the waste-bin. These basic environmental instructions complement the teachings found in our Islamic religion and in the Holy Qur'an.

The role of teachers is important and complementary to the role of the mother. Environmental awareness and concepts may be introduced in all the lessons she teaches and linked to the natural environment at the national and international level. Such awareness can be taught in all courses, - science, religion,

mathematics, by incorporating the ideas into the subject matter. For example, a lesson on the ear may include both its role in hearing and the problems of noise pollution; on the eyes, sight and how to avoid air pollution. The link can be drawn between general health and the way environmental pollution causes diseases that lead to loss of life, economic and social resources.

The role of women has no end. It forms the basis of the development of society and the preparation of the new generation.

To be continued...

Noha El Maraghy

Expected Activities for PERSGA during the year 2000

- ♦ SAP Task Force Meeting (September)
- ♦ Executive Committee of PERSGA and Preparatory Meeting for the Council (October)
- ♦ PERSGA Council Meeting (November)
- ♦ Expert Meeting for revising the Protocol on the Protection of the Marine Environment from Land-based Sources of Pollution (date to be finalised)

This issue of *Al Sambouk* has been produced at the PERSGA Secretariat by Dr. Dirar Nasr and Roderick Fleming (Editors). Translation by Dr. Dirar Nasr with assistance from Dr. Khaled Hariri and Ms. Reem Al-Qawwas; Arabic proof-reading by Ms. Noha El-Maraghy.

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