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REPORT
ON
INDUSTRIAL ENVIRONMENTAL IMPACT ASSESSMENT
IN WESTERN ASIA

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Mr. Waller was contracted by ESCWA to prepare the study. The views expressed therein are those of the author and do not necessarily reflect those of the United Nations Economic and Social Commission for Western Asia.

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CONTENTS

	Page
1. INTRODUCTION	4
2. OVERVIEW	5
3. FINDINGS	
3.1 General	8
3.2 Bahrain	8
3.3 Egypt	9
3.4 Iraq	10
3.5 Jordan	11
3.6 Kuwait	11
3.7 Oman	12
3.8 Qatar	12
3.9 Saudi Arabia	13
3.10 Syria	13
3.11 United Arab Emirates	14
3.12 PDR of Yemen	15
3.13 Summary of Findings	15
4. DISCUSSION AND CONCLUSIONS	
4.1 Environmental Awareness	17
4.2 Understanding of EIA	17
4.3 Reviewing EIA	19
4.4 Simplified EIA	20
4.5 Training	22
5. RECOMMENDATIONS	
5.1 Environmental Awareness	25
5.2 Understanding of EIA	25
5.3 Simplified EIA	26
5.4 Sectoral Questionnaires	26
5.5 Data Bank of Sectoral Questionnaires	27
5.6 Training in Simplified EIA	27
5.7 National EIA Panels	27
5.8 Regional Meetings of EIA Panels	28
5.9 Guidance in Reviewing EIAs	28
5.10 Regional Training Schemes in Understanding EIA	29
5.11 Material and Training in Arabic	29
6. ACTION PLAN	
6.1 Introduction	30
6.2 Creation of More Environmental Awareness	30
6.3 Encouragement to Form National Panels on EIA	30
6.4 Provision of Training in Understanding EIA	31
6.5 Development of Simplified Approach to EIA	33
6.6 Advice on Staffing of EIA Review Office	35
6.7 Provision of EIA Material and Training in Arabic	36

CONTENTS (Continued)

7. ACKNOWLEDGEMENTS	37
8. ANNEXES	38
8.1 Summmary of Findings	39
8.2 Development Proposals Requiring an EIA	40
8.3 Environmental Planning Questionnaire	42
8.4 Situation in Egypt	47
8.5 Situation in Iraq	49
8.6 Situation in Jordan	51
8.7 Situation in Syria	53
8.8 Persons met	56
8.9 Executive Summary	61

1. INTRODUCTION

The terms of reference for the mission and this report were related to the countries of Western Asia. In detail these were to:-

- [a] assess the application of environmental impact assessment [EIA] to industry, the constraints inhibiting its implementation, the organisational arrangements and the technical capabilities in the countries,
- [b] develop an outline of a region wide information exchange network relating to EIA and industrial planning,
- [c] outline training programmes for those concerned with EIA, eg, planners, environmental specialists, industrial managers, etc; identify potentially competent institutions as regional centres for training,
- [d] propose guidelines for cost effective simplified EIA to assist in the assessment of the environmental significance of industrial developments.

The mission itself lasted 14 days during which Egypt, Jordan , Syria and Iraq were visited in November 1986.

Material was also drawn from a mission for the United Nations Environment Programme's Regional Office for Western Asia in September/October 1986. During this mission the six countries of the Gulf Cooperation Council were visited, viz Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and the United Arab Emirates. This mission was primarily aimed at developing the organisational structures for environmental planning and management. This involved the assessment of EIA practice in each country [Report by Roy A Waller 'Strengthening Environmental Institutions in the Gulf Cooperation Countries', December 1986].

In addition, a mission to PDR of Yemen, again for UNEP/ROWA, in November 1984 was specifically aimed at helping to introduce an environmental component into industrial planning. An outline environmental planning questionnaire was developed for industrial development [Report - Roy A Waller 'Environmental Planning and the Assessment of Industry', November 1984].

This work has also had the benefit of two reports on the region produced by others. ESCWA in October 1984 produced 'Strengthening of the Environmental Protection Capabilities in the Countries of Western Asia'. In July 1985 Abdel Rahman Abdulla reported to UNEP upon 'Environmental Management in the States of the Western Region of Asia'.

2. OVERVIEW

Environmental Impact Assessment [EIA] is SIMPLY the attempt to predict what environmental changes are likely to be brought about by a proposed development, eg a factory. Ideally EIA should cover the physical, ecological and socio-economic changes or impacts. Often the scope starts by being somewhat more narrow and expands as a country becomes more aware and gains experience of the wider issues.

These predictions of environmental consequences [both good and bad] should then be taken into account in decisions about whether a development should be 'permitted' to proceed, on what site, with what degree of pollution control and with what other conditions, constraints, etc.

In many countries such questioning of the environmental factors relevant to development planning has been regarded simply as part of 'good' planning practice. It has not needed a name.

In the 1970s the USA introduced a formal system for federal developments which required the production of a specific document called an 'Environmental Impact Statement' [EIS]. In the USA this document has a legal status. A development may not proceed as long as the EIS is being challenged in court. This has meant that developers produced exhaustive documentation in the attempt to forestall any criticism which might lead to a court action [significant improvements have now been made in the procedures]. This did not prevent extensive legal challenges and great delays.

This situation produced several reactions in other countries. They included:-

- [a] EIA would delay badly needed economic development,
- [b] EIA was expensive,
- [c] the consequences of an EIA were very expensive,
- [c] EIA needed an army of specialists, batteries of computers, etc,
- [d] EIA could not be done without large volumes of data,
- [e] EIAs were elitist and EISs incomprehensible to the uninitiated.

As a result, in many countries EIA was ignored even when an EIA had been carried out by others, eg, an ex-patriate team of consultants as part of a bi- or multi-lateral aid project. The EIS became part of the seemingly inevitable pile of dust gathering and unread reports. As a result the often good advice that they

contained was ignored.

It is important to recognise that the problems in the USA arose from the legal status of EIS and the manner in which they were written. The actual procedure of assessment [EIA] and the value and the value of doing it was not and is not in question.

The world can thank the USA for much pioneering work in the techniques of EIA. Unfortunately the EIS has become a symbol of bureaucratic delay. Not everyone distinguishes between the assessment [EIA] and the legal document reporting it in the USA [EIS]. This report will not refer to an EIS but to an 'EIA report'.

Partly in response to this situation UNEP [Industry and Environment Office, Paris] in 1980 produced 'Guidelines for Assessing Industrial Environmental Impact and Environmental Criteria for the Siting of Industry'. These were published as a means of helping countries to make a start in the use of EIA or to further develop EIA practice.

The guidelines were produced for worldwide use. Therefore they were general and fairly comprehensive at the same time without being over specific. Workshops were held throughout the world to introduce the guidelines. Copies of the guidelines were also given to each UN member country.

Some countries, mostly those that had some environmental awareness and had begun to think about how to plan industry with environment in mind, found the guidelines valuable.

Some countries found it difficult to find what was particularly applicable to them and to their situation. They considered the guidelines too complex and daunting.

There is therefore a clear need for help more specific to a country or region at a more fundamental level.

The EIA process is primarily about asking questions [and getting answers!]. The main questions are:-

- [a] What are the nature and characteristics [raw materials used, effluent, labour requirements, etc] of the proposed development?
- [b] What is the nature of the environment [residential, desert, agricultural, etc,] into which the development will intrude or affect?
- [c] What are the likely interactions [loss of crops, reduced unemployment, etc] between the development and its environment?
- [d] What can be done to minimise the bad effects [install pollution control equipment] and to maximise the good effects [train local people to take up job opportunities]?

Throughout this report, the terms 'full', 'simplified', & 'preliminary' are used in relation to EIA in the following senses.

A 'preliminary' EIA is a relatively quick review of a development proposal. The purpose is to ascertain the main potential impacts and to advise on whether the impacts are likely to be sufficiently significant to require a 'full' EIA.

A 'full' EIA is a relatively extensive study of the impacts of a development proposal. It is also relatively rare. Typically it costs 0.1-1.0% of the total project costs. It will use scientific data collection, possibly computer modelling, etc.

A 'simplified' EIA is more than a 'preliminary' EIA in that it can involve significant work because decisions may have to be made about significant impacts. It may also be less than a 'preliminary' EIA in that the level of expertise & experience available and involved may be lower. There may be a greater reliance on the use of questionnaires, checklists, etc. One of the objects of this report is to identify what will help in carrying out a 'simplified' EIA.

Issuing industrial development permits is often confused with EIA. However, EIA is often not included in the permitting process. Permitting, if it involves any environmental component at all, often only requires that regulations/specifications [eg relating to the discharge of effluent], if any, will be met. Questions [b], [c] and to some extent [d] are not posed. In addition, the assessment of what will be 'permitted' is not usually specific to the particular site.

Sometimes the 'audit' of the pollution or impact of a factory is referred to as EIA. Similarly the work done for a 'State of the Environment Report' in recording the levels of pollution, producing an inventory of natural resources, etc, is referred to as EIA. Strictly this is not true unless the impact upon the environment is being assessed at the same time. This would mean that the environmental losses [caused by the pollution, etc] and the environmental gains [caused by job creation, etc] would have to be assessed by comparison with a prediction of what would have happened in the absence of the factory. In this sense EIA could be used to assess the impact of spending money to reduce pollution. EIA can help to allocate scarce resources to control pollution where it will do most good.

3. FINDINGS

3.1 General

The situation in Western Asia is summarised below for each country individually. The situations in Egypt, Iraq, Jordan and Syria are described more fully in Annexes 8.4 -8.7. The situations in other countries are to be found described in more detail in the original mission reports referred to above.

The concept of EIA for those who have little environmental awareness is difficult to accept. **Awareness** is therefore discussed together with the **understanding** and **use** of EIA, the use of a **permitting** system, the human and other **resources** available for EIA and the nature of each country's **organisational structure**.

In some countries ideas were generated which could be helpful more widely. They are initially described here but are drawn out later in Chapter 4 and discussed more fully there and later. Apart from these embryonic ideas, the country reports are intended to be factual statements of the situation as found at the time of the missions.

Some countries are relatively small and centralised. Others are bigger and dispersed. What may be understood at the 'centre' may not be in the 'provinces'.

3.2 Bahrain

A number of EIAs for major schemes have been produced by ex-patriate teams. Little attempt, if any, has been made to review them. It is not known if they have had any effect or what the effect was upon the decisions made about the industries concerned.

There is an embryonic environmental permitting system for industrial developments.

There is a feeling that full EIAs are beyond the decision making process's capacity to take into account. This is reinforced by a lack of environmental data which would make full EIAs expensive and time consuming. More effort is being put into assessing existing installations and a start has been made in collecting environmental data.

It is a small country and most of the population is urban. EIA could be handled centrally.

There is a need for a simplified form of EIA to add to the existing permitting system. A simplified EIA is an essential step to EIA gaining acceptance at government level. The major existing

industries are probably already aware of EIA. A number are of international origins and employ ex-patriate environmentally aware professionals. In some cases they are more aware than appears to be the case at government level which seems to lack commitment to environmental protection and conservation.

There needs to be an enhanced awareness of the importance of the environment and environmental issues. Improving this awareness could go hand in hand with 'selling' the idea of a simplified EIA. The time is ripe for the acceptance of a simplified EIA in order to pave the way for the acceptance and review of full EIAs in the few cases where they will be needed.

An organisational structure exists in Bahrain which could encompass the commissioning and review of EIAs. There is an Environmental Protection Committee supported by a Directorate of Environmental Affairs [in the Ministry of Health]. This has half a dozen professional staff; they may need encouragement and help to get them started upon EIA.

3.3 Egypt

There is little environmental awareness and for practical purposes little understanding of EIA.

There are, however, enough qualified and experienced professionals [scattered among ministries, universities, etc] to make a good ad-hoc team to undertake and especially to review full EIAs. There would need to be a strong focal point for EIA.

The Egyptian Environmental Affairs Agency, which reports to the Prime Minister, is not yet able to provide this focal point. The EEAA chairman could however convene the ad-hoc team [suggested above] to help in the interim. If necessary, the team could be assisted by one or more ex-patriate experts. It will be important however for there to be continuity of thinking and support and for this continuity to be in Arabic. Most professionals [many of whom speak conversational English] do not speak English well enough for the purposes of EIA. They will be able to more fully follow a technical discussion and to contribute to it if it is in Arabic.

There is an extensive industrial permitting system, albeit very fragmented among 15 ministries etc. The only environmental considerations are the meeting of air pollution emission and effluent discharge standards. In any event, these are rarely observed by existing industry.

A start is being made in the collection of environmental baseline data.

There is an urgent need for a simplified EIA. Fortunately there is little new industrial development at the moment. Indeed EIA might be applied to choosing the most appropriate way of spending limited resources in tackling the clean-up of the Nile, etc.

3.4 Iraq

Environmental awareness is limited to pollution [water, air & wastes]. However many other factors [social, economic, infrastructure, historic monuments, etc] are taken into account as part of land use planning.

The consideration of pollution is primarily the responsibility of the Environmental Engineering Department of the Ministry of Health. The DG of Preventive Medicine & Environmental Health Services is also the Secretary General of the High Environmental Council. This is charged with the determining environmental policy, standards, etc [to be ratified by the Vice-President]. There is the intention to create an Environmental Protection Council in each Governorate.

The Environmental Engineering Department is relatively well staffed with about 25 staff [predominantly engineers and environmental health professionals]. The section dealing with planning and land use consists of only 2 engineers. This reflects the general lack of consideration of the interaction amongst environmental factors [other than pollution] and between the environment as a whole [again with the exception of pollution] and the planning of industry.

The permitting system for industry is well developed. Pollution is extensively considered and a number of other factors are taken into account [see first paragraph of this section]. There is some consideration of site specific factors. The efficiency of enforcement was not clear.

Based upon the general planning questionnaire [within which the Ministry of Health works], the range of topics covered is that which would be expected of an EIA. It was not possible during the mission to meet with the team concerned as they are part of the President's Office. It is not known how the information gathered is reviewed and used. The indications were encouraging.

There is little appreciation of EIA although the questionnaire referred to above and the more specific questionnaire used by the Ministry of Health in relation to pollution contain many of the basic elements. There is a need to introduce a simplified form of EIA to ensure that the interactions are properly considered. Now would be a good time to introduce it. The level of investment in new projects is low. It might be worth considering the use of EIA to help allocate scarce resources to cleaning-up existing industry.

3.5 Jordan

There is a high degree of environmental awareness in Jordan. There is an active and relatively large department of Environment in the Ministry of Municipalities and Rural Affairs.

There is a systematic permitting system for industrial development. Within this a simplified form of EIA is practised which involves site visits and the enforcement of site specific constraints. The occasional full EIA seems to have been performed by consultants associated with the engineering design of a project.

Monitoring, particularly of water in relation to industry, is practised by several organisations, the Ministry of Health, the Water Authority and the Department of Environment [using the Royal Scientific Society]. Data is being acquired; so far mostly for water but a start has been made on air as well.

Thought is being given to the Department of Environment developing branch offices in the more important regions of the country.

When EIA develops to the extent that it represents a major activity, the Department of Environment may need to reconsider its present policy of doing the EIAs itself. It may have to change from 'doing' to 'reviewing'.

Jordan has the resources to do full EIAs. A complete understanding of EIA is probably limited to a few people and a wider spread of that appreciation is desirable.

There is no existing training capacity relevant to EIA. The current use of a simplified form of EIA in the permitting process could however be the basis of part of a training programme. The Royal Scientific Society in view of its experience is a possible centre for a computerised data bank.

3.6 Kuwait

There is an Environmental Protection Council which operates at policy level. Within the Environmental Protection Department of the Ministry of Health, Kuwait is fully aware of the benefits of EIA. This department has a staff of about 150 but this does include for all the normal environmental health activities and an extensive laboratory. The existing standard permitting process for industry is concerned primarily with pollution and not the wider environmental considerations that an EIA would cover. The Environmental Protection Department is aware of need to take a wider view and appears to do so where it is appropriate.

This view upon the benefits of a wider approach is not perhaps

shared by all other ministries. As Kuwait is an urban state and relatively compact this may not be too important. The Environmental Protection Department automatically reviews all projects and can institute any form of EIA that it wishes in order to supplement the normal permitting procedures. A wider enthusiasm for EIA engendered by a wider understanding of the basics of a simplified EIA would be valuable.

There is the possibility of using the experience of both the Environmental Protection Department and the Kuwait Institute for Scientific Research [KISR] to help train personnel from other Western Asia countries. This would probably be at a relatively advanced level rather than at the basic level appropriate to a first introduction to EIA. KISR is a possible centre for a data bank [computer based] relating to EIA.

3.7 Oman

Oman is unique among the countries of Western Asia in having a Ministry of Environment and Water Resources. It has about 20 environmental staff but it is short of experienced national personnel. Perhaps as a result the practice of full EIAs is not widespread and may not be widely understood. There is however a permitting procedure of which EIA could form a part. The level of environmental awareness is high.

The country is relatively large and decentralised compared to the urban states of the Gulf. There is probably a need for a wider understanding of EIA and for a simplified EIA for routine use particularly in the regions, if only as a preliminary screening of projects.

There are adequate resources to do EIAs, albeit many professionals are ex-patriate. There will need to be a stronger focal point for EIAs for there to be progress beyond the simplified level. A start has been made in gathering baseline data. The country is particularly strong in terms of wildlife/nature conservation.

3.8 Qatar

A number of EIAs have been produced by ex-patriate teams. These have been reviewed by a resident ex-patriate and criticised for lacking data. It is not known what effect the EIAs have had upon the decisions taken. Qatar is just about to start monitoring air pollution.

In 1986 the Environmental Protection Committee's Technical Secretariate [professional staff of 6] was given authority to review the impact of development proposals and in effect to issue environmental permits for private sector developments. A planning questionnaire has been drafted. Emission standards for emissions of air pollutants are being set.

Qatar is a small country with a mostly urban population. Significant decentralisation is unnecessary. Campaigns of environmental awareness have been fairly extensive. There does however seem to be room for more commitment at the government level.

Qatar would benefit from a wider understanding of EIA and from any material beyond the simple planning questionnaire.

3.9 Saudi Arabia

There is ample environmental awareness at a policy level and a strong Environmental Protection General Directorate [30 professional staff] exists within the Meteorological and Environmental Protection Administration [MEPA].

EIA is understood within MEPA if not widely applied. Draft procedures are being prepared for full EIA.

There may be some benefit in using a simplified approach to EIA in areas remote from MEPA's HQ. Such an approach would also help to encourage a more pragmatic and site specific approach generally. There is a tendency to tackle some problems by relying upon standards. Some problems are tackled in great detail compared to others which appear to be ignored, eg studies are emphasised at the expense of enforcement.

There are ample resources to do simplified EIAs and some full EIAs. However most of the experienced professional resources that could be used to do and to review full EIAs are ex-patriates.

The collection of environmental baseline data is well underway.

There are strong consulting house in the country which could be encouraged to move into the field of EIA.

The King AbdelAziz University in Jeddah runs a number of undergraduate and graduate degree courses in environmental sciences. One component of these is a course on Saudi EIA. The teaching staff could form the basis of regional training in EIA.

3.10 Syria

The understanding of EIA is confined to a few people. Environmental awareness, although not high, is increasing rapidly. If intentions are anything to go by, then significant progress is about to be made.

The imminent formation of an Environmental Agency with its own Minister exercising coordinating and supervisory powers over those ministries whose activities affect the environment, is an

impressive move. The planning and thinking going into its creation is detailed and systematic. A High Environment Committee of deputy ministers and a large number of sub-committees have already been formed. The sub-committees deal with the various aspects of the environment [eg air, water, protected areas, soil protection, urbanisation, etc]. From the point of view of EIA however, only the High Environment Committee is in a position to take a broad view. EIA will need a further sub-committee to consider EIA in general, to help its introduction and to monitor EIA practice and to possibly discuss the EIA reports of individual project proposals.

Significant work is being done to monitor the environmental quality of some rivers.

The country is large but thought has already been given to this and versions of the High Environment Committee have been set up in each of the 13 districts of Syria.

There has been no systematic permitting of new industries and no consistent consideration of the site in agreeing levels of pollution control.

There may be enough professional resources to undertake EIAs. Training in the understanding of EIA will be essential. It will have to be in Arabic because English is only one of many second languages. Many professionals have been educated in continental Europe.

There is an urgent need for a simplified approach to EIA. If standard questionnaires are to be useful in a simplified EIA, it was suggested that typical reasons for asking a question should be given. This would enable the user to know what to look for in the answers he receives.

3.11 United Arab Emirates

Some emirates/municipalities [Dubai certainly and perhaps Abu Dhabi & Sharjah] have extensive permitting systems and are environmentally aware & active.

At the federal level, the Higher Environment Council is inactive. Its Technical Secretariate within the Ministry of Health [4 professional staff] is not able to produce any great practical results because of a lack of authority and resources.

An understanding of EIA is not likely to be widespread. There is a shortage of baseline data.

Within the UAE as a whole there are undoubtedly sufficient qualified professionals to carry out simplified EIAs and occasionally full EIAs. It would mean a greater liaison between the Federal authorities and the emirates/municipalities collectively. The resources of the emirates/municipalities, if put into a pool for ad-hoc EIAs and appropriately organised, could undertake full EIAs.

3.12 PDR of Yemen

PDR of Yemen has little industrial development and as yet little environmental awareness. There is some initiative at a policy level but not yet a complete commitment to the importance of the environment.

PDRY relies upon overseas consulting houses for its feasibility studies of major developments. Nonetheless it appears to distrust them. There is a rudimentary permitting system and a National Environment Council. There is also a feeling that the country has neither the resources nor the experience to do EIAs. This reflects a lack of understanding of EIA. There is an urgent need for PDRY to make a start for itself in doing simplified EIAs.

Suggestions have already been made in the mission of 1984 for a simplified approach to the EIA of industry. Whilst there are no experienced personnel, there are sufficient environmentally [taking a broad view] trained personnel to carry out EIAs. They are admittedly scattered among various ministries, etc and will need bringing together on an ad-hoc basis. Most are young, but youthfulness is no handicap when it comes to asking questions. Initially all the work could be done from Aden.

Within industry there is some environmental awareness, mostly as a result of a number of ex-patriate professionals involved in running them.

3.13 Summary

During the missions the meetings were of necessity limited in geographical spread. What is understood in the capital city may not be comprehensible in a municipality/governorate/district remote from the capital. In the case of a federation of states, its members may have differing resources, policies, etc. The level of awareness referred to is primarily that amongst those concerned with industrial developments.

The summary of the findings [see Table in Annex 8.1] can only be indicative.

Lebanon and the Yemen Arab Republic were not visited and are not referred to specifically. It is likely however that their situations will be typified by that in one of the other countries of Western Asia.

Ultimately each country will have to decide for itself whether the advice proffered in this report or the help that may be proffered by ESCWA or UNEP as a result of this report will be useful.

A reference to adequate human resources to carry out EIA does not

mean either that they exist in a coherent unit or that they are trained in EIA. It simply means that the country has an adequate number and variety of professionals with environmentally related disciplines and experience. These professionals could then in principle be brought together on an ad-hoc basis to do or to review an EIA. They would initially need some guidance and possibly 'leadership' by somebody experienced in EIA.

'Doing' and 'reviewing' EIAs are two separate functions. A preliminary EIA could be done by one or more of the developer, the regulatory agency, the central government environmental office, etc. In the private sector a full EIA would almost certainly be paid for by the developer and be carried out by him or his consultants. The regulatory agency and/or the central government environmental office would then review it, ask for more information, etc and then act or advise accordingly.

Clearly to do a full EIA will take much more effort than to review it.

The situation with a 'simplified' EIA is between the two. The probability is that, except for major developments, a simplified EIA would be carried out by the government office or regulatory agency based upon the details supplied by the developer whether public or private in response to a questionnaire. A 'simplified' EIA will contain large elements of judgement. It would be difficult to review such an EIA without actually doing it for oneself.

4. DISCUSSION & CONCLUSIONS

4.1 Environmental Awareness

EIA can only be carried out by those who believe that there will be effects upon the environment and that these effects may be important. They have to believe that the environment matters for one or more reasons. Similarly for decisions to be affected by the findings of an EIA, decision makers also have to believe that the environment matters.

This belief does not exist amongst those making decisions about industry in all the countries of Western Asia. This unfortunately seems to be the case in Egypt, Syria & PDR of Yemen and, to a lesser extent in Bahrain & possibly Qatar, Iraq and parts of UAE.

In such countries improving environmental awareness at the decision making level is of the highest priority. Without it EIA will be ineffective. Fortunately there is not much new development at the moment. An increase now in environmental awareness will not require much investment in the near future, at least not in relation to new development.

There is in Egypt, Syria, Iraq, Bahrain and to a lesser extent in many other countries a significant amount of existing industry which has a significant impact upon the environment. In Egypt this impact occurs primarily along the Nile and its canals. EIA could be useful in helping to order priorities in the allocation of scarce resources to pollution control measures.

4.2 Understanding of EIA

Many people do not understand the difference between EIA and a permitting/licensing procedure. The latter is often confined to checking that the development will meet a set of general regulations or standards which are not site specific. Such regulations may, for example, limit pollution discharges. As was discussed in Chapter 2 EIA is concerned with the environmental characteristics and susceptibilities peculiar to particular sites as well as with the proposed development.

This lack of understanding exists to some extent in all countries. In Egypt, Syria, PDR of Yemen [in 1984], Bahrain, Qatar, and possibly Iraq only a few people understand EIA. In all other countries only a small proportion of those involved in environmental matters and in industry understand EIA. Even in departments specifically responsible for the environment there is a widespread lack of understanding.

In most countries there is the feeling that a full EIA is beyond them. Even when one is produced by an ex-patriate team, the report is often regarded with suspicion and reasons tend to be found to

avoid reading and reviewing the EIA. As a result the findings are often ignored. It is probably true that the EIA reports are often found to be incomprehensible. This is the fault of the authors; they need to be told and instructed to produce a version that is comprehensible to its readership, if necessary in Arabic. Potential readers need not hesitate to say that a report is incomprehensible; EIA reports must be relevant, comprehensible and meaningful to all those who may be affected or have to make decisions based upon them. If it is not, then the shortcoming is with the authors not with the reader.

'Fear' of or 'prejudice' against or misunderstanding of EIA is deep rooted. There may be some value in avoiding the use of the phrase EIA, particularly in the days of transition from simple permitting to site specific EIA. One could talk of introducing a site specific environmental factor into industrial planning, using an environmental planning questionnaire, etc.

Whatever EIA may be called there is a need, second in priority only to a need for environmental awareness, for the EIA process to be understood. This is most particularly true for Egypt, Syria and PDR of Yemen, but many professionals concerned with industry and/or with environment in all countries would benefit from a better understanding. This is true of Bahrain, Iraq, Qatar, parts of the UAE and [to reiterate] to some extent of ALL countries of Western Asia.

There is a need for a short [1 day] training sessions for relatively large numbers of people [decision makers, industrial professionals, environmental practitioners, academics, consultants, etc] both governmental and private. The private element will be important in many countries where the private sector developer or his consultant will be expected to submit an EIA report with his permit application. It will be much easier for the regulatory agency to deal with local consultants than ex-patriate ones. Countries should encourage consultants to form joint ventures with foreign consultants experienced in EIA. In this way they can equip themselves to carry out EIA and in due course to develop their own country specific approach and background information.

In view of the numbers of people likely to be involved, most of the training sessions will need to be national. Most of the time would be spent with the participants actually doing an EIA [albeit in outline] of a development likely to be of relevance to the

country. The 'lecturer' would behave as a catalyst and draw out the relevant questions from the participants. He would need to have at his disposal case study material from which he could provide data on demand about the development, its environment, interactions, etc.

4.3 Reviewing EIA

Reviewing an EIA report prepared by others seems to take second place in most people's minds to doing an EIA. In many countries, however, the first contact with an EIA is receiving one prepared by an ex-patriate team.. This may be in connection with a multi- or a bi-lateral aid project. Regretfully such EIAs have often been pigeon-holed.

The problem of comprehensibility was discussed above in section 4.2. More difficult to deal with are the questions of accuracy and completeness. To some extent a different type of person will be needed compared to those who 'do' EIAs. They will probably be more critical, have wider horizons, be more experienced, be professionally awkward in not accepting what they are told, etc.

Initially the heads of the relevant government departments will need to be briefed. One regional session of 1-2 days would be required. The sessions would cover the selection of suitable staff and the sort of direction that should be given to them. The session should also cover some of the ground that they would expect their staff to cover.

Initially 3-4 courses would be required for the staff likely to be involved in reviewing EIAs. More would be required as the practice of EIA became more extensive and fresh staff became involved. Such courses would need suitably prepared EIA reports as case study material. Courses might last a week. They would need to help the reviewers to answer the following questions:-

- Are the topics considered in the EIA appropriate? Are any superfluous? Are any significant ones omitted?
- Are the predictions accurate?
- Are the effects described in terms which are clear and likely to be meaningful to the decision maker and to those involved?
- Are the conclusions valid?
- Would it be reasonable for more to be done to mitigate adverse effects or to maximise beneficial ones?

4.4 Simplified EIA

Most countries, perhaps with the exception of PDR of Yemen, have the human resources to do a full EIA. This is not to say that they have the necessary training or that they currently have access to the necessary tools, eg, computers, software, data banks, or that they have the experience. However once the people are available the rest becomes possible. In most countries these human resources are not in a coherent unit. Whilst there are an adequate number of environmental specialists of various disciplines, they are scattered in various ministries, industries, universities, etc. The countries lack the managerial know-how necessary to organise an EIA.

It is evident that all countries of Western Asia, with the exceptions of Kuwait, Saudi Arabia and Oman would have such difficulties. Even then the latter two countries would probably have to rely on ex-patriate experience.

One of the problems with full EIAs is knowing when to do them. Many have tried to develop criteria, all with very limited success. Saudi Arabia has a informal draft list of development proposals requiring the submission of an EIA report. This is referred to in Annex 8.2. The UNEP/ESCWA guidelines suggest that a preliminary EIA be done for all projects and that a decision about the need for a full EIA be based on the results. Ultimately it is a matter of judgement based upon the local conditions.

Training to manage full EIAs is time consuming and expensive. Full EIAs are likely to be needed for relatively few projects. A simplified approach to EIA, somewhat similar to that adopted in Jordan & Iraq was prepared for PDR of Yemen. The procedures adopted in Jordan and Iraq are applied to all projects. The amount of work is adjusted to the significance of the impact. Such an approach would be applicable to most projects. It would also be a useful preliminary assessment to a full EIA, although it is somewhat less searching than the 'preliminary' assessment suggested in the UNEP/ESCWA guidelines. Such a simplified approach [see Annex 8.3 for a planning questionnaire based on that developed for PDR of Yemen] does however contain most of the elements of a preliminary EIA. This initial questionnaire should not be too long and complex.

It is suggested that such a simplified EIA be applied also to all projects. It should be sufficiently flexible not to over burden the environmentally insignificant and at the same time be able to respond to the more critical ones. It would also readily highlight the occasional project requiring an in-depth study or full EIA.

Returning to the consideration of a simplified EIA. Initially the simplified EIA could just refer to pollution and its effects. The use or displacement of natural resources, wildlife, etc, and the wider socio-economic issues could follow as experience is gained. This will not be recommended but it is the pattern which has been

followed by a number of countries. It can be justified on the basis that some progress is better than none if too much is expected too soon.

If the responses to the planning questionnaire indicate a project with potentially serious impacts, then supplementary more specific questions will need to be posed. For example, if it proved to be a project concerned with the manufacture of intermediate chemicals for the plastics industry, it would be necessary to have details about specific pollutants. It would help to have a questionnaire and background material from a previous similar project. There would be great value in building up a data bank of such sectoral questionnaires and data. This could be on a regional or even a wider basis. There would be advantages in using the regional language.

When faced with an ammonia-urea plant, for example, a country would consult the data bank requesting a questionnaire. If one existed it would be sent a copy and any supporting data. Once the country had used the questionnaire and completed its work, it would 'in return' supply to the data bank suggestions for 'improvements' to the questionnaire together with any additional data that it had been able to acquire.

If, on the other hand, a questionnaire did not exist, the country would have to go ahead and produce one for itself. When it had completed its work it would supply the data bank with its questionnaire [updated in the light of its own experience] and any data that it had acquired.

In this way a comprehensive set of sectoral questionnaires would be gradually built up covering the industries of interest to the region.

Similarly the environmental planning questionnaire may need to be amplified in respect of certain types of sensitive environment. A similar procedure could be adopted. Once again a set of sectoral environmental questionnaires would ultimately be developed for the various types of environment [agricultural, urban, ground water, rivers] important to the region.

Planning questionnaires can be used as aide-memoires or checklists. The more extensive versions do not need to be posed to every developer.

In due course the data bank could be extended to cover typical interactions between industry & the environment, dose-response relationships, computer models, etc.

Beyond this point we are discussing full EIAs and going beyond the scope of this current report.

The basic thing is to get people and countries to start to apply EIA by asking questions, by not being necessarily satisfied with the first answers that they receive, asking supplementary questions about industry, the environment and their interaction.

Countries will probably find it useful, particularly in the early days of using EIA, to form a national panel on EIA. Such a panel could comprise 'experts' in various environmental disciplines, pollution control, industry, etc, drawn from government, the universities, industry, consultants, etc. The panel might initially need to be assisted by ex-patriate experts in EIA [possibly from another country in the region] but essentially it should try to become self-sufficient as soon as possible.

The panel should be the focal point for the development and encouragement of the practice of EIA. It could take a major role in the training of practitioners. It could coordinate the planning and implementation of national training sessions and could liaise with similar regional activities.

As mentioned above, some national panels may need the assistance of ex-patriate assistance [which be English or possibly Arabic speaking] in the early days. Such panels would in the longer term have the major advantages [over entirely ex-patriate help] of being on the spot, providing continuity, knowing the local situation and speaking the local language!

It might be useful to set up a regional conference from time to time of the senior members of such panels. In the case of those countries more advanced in the use of EIAs and possibly not needing such panels for themselves, it would be helpful if they had a small panel to act as a channel for help to other countries. At the very least the senior personnel in the appropriate government agency dealing with EIA should attend the regional conferences of the senior members of the panels. These regional conferences could plan the development of training in & application of EIA, liaise in the setting up of one or more data banks, etc. In particular, they would assist in sharing experience and in using regional resources to the benefit of the region.

In particular the regional conferences and the national committees should consider ways of:-

- making do with limited data,
- acquiring data without expensive equipment & time consuming surveys [eg assessing the prevailing wind from local knowledge, patterns of vegetation],
- documenting sources of help,
- making decisions in situations of uncertainty,
- involving younger questioning professionals in the development and application of EIA.

4.5 Training

On an individual basis Professor M Kassas of Cairo University is an international figure in the environmental field with an

understanding of EIA. He ought to be involved in some way with the raising of the levels of awareness and understanding of EIA in the region.

A number of countries produce graduates in environmental disciplines but only two have experience of training specifically related to environmental assessment.

Kuwait has held EIA courses involving the Kuwait Institute for Scientific Research [KISR] but run in part by ex-patriate consultants. KISR have a wide experience of the more sophisticated tools [computer modelling, etc] of EIA. However, as the need is primarily to get EIA introduced at a simplified level or introduced as a concept where none exists at the moment, KISR's contribution may be better made when countries have taken the first steps and are demanding the tools to get on with EIA!

The King AbdelAziz University in Jeddah runs an undergraduate course in EIA aimed at the Saudi situation. As it stands it has undue emphasis upon the background of EIA in the USA. It is also too extensive for the present purpose and is conducted in English. It does however represent a capacity and experience of teaching EIA by Arabic speakers.

Some or all of the above could help with some or all of the following training courses which have been identified as necessary in the preceding discussion. In addition the experience of countries like Jordan, Kuwait, and possibly Iraq & Oman in applying a simplified form of EIA could contribute.

- [a] Understanding EIA. A one day session for all professionals and decision makers. Over a year or so we may be talking of at least one session in each country with a total of about 20 sessions covering some 500 people.
- [b] Simplified EIA. An extension of [a] for those who will be doing the EIAs or providing information for them. Initially an average of one course per country for say 200 people.
- [c] Staffing of an office reviewing EIAs. A single 1-2 day regional session for heads or prospective heads of 'review' offices.
- [d] Reviewing EIAs. Sessions lasting perhaps 5 days for the staff of 'review' offices. Possibly 3 sessions per year covering 50 people.

As discussed several times above, it will be ESSENTIAL for [a], [b] & [d] to be conducted in Arabic with arabic 'course' material. Otherwise the benefit for many people will be lost.

The success of [a] will depend essentially upon one person, namely the course leader. The intention would be for him to educate from the participants the elements of an EIA relating to a hypothetical industrial development. A case study will be needed

as the means of providing sufficient information to make the exercise credible. By demonstrating that one can make a start with an EIA in a very short time and by discussing some of the significant impacts, the participants should come to understand the basis of EIA, its role in planning, its value to decision makers and when they will need the tools of EIA in the future.

The other courses can be more structured and conventional. They will be less dependent upon the course leader.

5 RECOMMENDATIONS

5.1 Environmental Awareness

The level of environmental awareness and commitment to environmental protection should be raised in a number of countries, in particular, Bahrain, Egypt, PDR of Yemen and possibly Iraq, Qatar, Syria and parts of the UAE.

In order for the review of industrial development proposals to be carried within a framework which is likely to result in decisions taking proper account of environmental priorities it is necessary that some countries be made more aware of the consequences of environmental damage and the loss of natural resources. A number of countries are still much more aware of the costs of pollution control and insufficiently aware of the costs of NOT controlling pollution.

It would seem that more high level effort is required from UNEP and ESCWA in this respect. Awareness and commitment must start from the top to be effective in the short term. 'Grass roots' pressure is invaluable but it can usually only slowly affect the decision making process.

In all countries there are governmental institutions either in being or in the process of being 'constructed' with the ostensible purpose of safeguarding environmental interests. Some of them are clearly not yet functional or effective. It may be hard to suggest that Egypt, Syria and Iraq need pushing. They may feel that their new institutions have not yet had time to develop. Nonetheless during these formative years supportive encouragement from UNEP and ESCWA can do nothing but good.

5.2 Understanding of EIA

A campaign of training should be undertaken to raise the level of understanding of EIA.

No country is so far advanced in its understanding and application of EIA that such training will be wasted. In many countries there is not enough understanding to take more than a first hesitant step. EIA needs to be understood not only by the few who will have the responsibility of undertaking the first albeit simple EIAs, it also needs to be understood by those reviewing the results of EIAs prior to decisions being made, they need to be understood by decision makers, by industrial managers and preferably by some of those likely to be affected by development. There are a large number of people who should understand EIA. Even in countries where EIA is practised, staff of only peripherally involved ministries do not understand the breadth of

consideration. Too often there is the misapprehension that the sole purpose is to ensure that environmental standards are met.

5.3 Simplified EIA

The concept of a simplified approach to EIA should be developed further.

A number of countries currently use questionnaires as part of their permitting procedures in order to vet the environmental aspects of proposed developments. In conjunction with site visits these enable a simple EIA to be undertaken, the site specific concerns to be taken into account and the environmentally conscious decisions to be made. Sometimes these exercises are a little narrow in their scope. Countries should be encouraged to build upon this approach. Others would find that starting in this way will enable them to ease into a wider concern for the environment in developmental decisions such as siting, the setting of site specific requirements, etc. **Those carrying out EIAs and those making decisions based upon them must be encouraged and helped to come to conclusions in situations of uncertainty.** Complete information will never be available. Acquiring data is time consuming and expensive. It will be in short supply in many countries for decades. Nonetheless decisions will have to be made about environmental issues as best they can.

A general planning questionnaire is given in Annex 8.3. **Countries should be encouraged to use this to create their own questionnaires.** The questionnaire sent to developers must be 'reasonable'. If it is too long and detailed it will be devalued. Its application to many proposals without a significant effect upon the environment will create the image of a piece of bureaucracy. Questionnaires must be as relevant as possible to the possibly important answers.

As experience is gained countries will find that more detailed questions need to be posed in relation to specific industries or environments. It will help if work done to create these more detailed questionnaires be pooled across the region. Initially it would be beneficial if examples could be provided to start the 'ball rolling'.

5.4 Sectoral Questionnaires

One or two sectoral questionnaires should be created relating to industries of particular concern to the region and to environments typical of the region.

These sectoral questionnaires would be used when the planning questionnaire has elicited the fact that a potentially environmentally significant industry was being proposed. Sectoral questionnaires will help to elicit specific information necessary to properly understand and predict the environmental impact.

Similarly such sectoral questionnaires related to the environment could be used when the early information has indicated that the site had particular sensitive characteristics.

5.5 Data Bank of Sectoral Questionnaires

A data bank housing sectoral questionnaires should be set up in one or more regional centres.

The initial sectoral questionnaires will only cover a limited number of industries/environments. From time to time countries will be faced with adding to the stock of such questionnaires on an ad-hoc basis. Having done so it would be useful to make them available to other countries in the region. A data bank [probably computerised, certainly it would need word-processing capability] could store not only the questionnaires but also supplementary information and examples. Countries using an existing questionnaire could feed back their experiences and suggestions for augmentation or improvement. Over a period of time a valuable regionally oriented store of information and help would be created.

5.6 Training in Simplified EIA

Even with a simplified approach to EIA, there will be a need for training in order to ease the transition from a permitting procedure which may at best only check against general regulations for pollution control to what is a site specific and open-ended consideration of the environmental impact. Not only will those engaged in doing EIAs need to have guidance upon what questions to ask but they will need to have some idea how to 'check' that they are getting sensible answers. They will also need guidance as to what supplementary questions to ask and why it is necessary to ask them; perhaps more importantly they will need to know what to do with the answers. Once the idea becomes clear and the 'right' people are doing the EIAs the application of EIA can to a large extent be allowed to evolve. It will be found that the practitioners will begin to develop their own ideas and begin to ask for the tools to further develop their capability. Such tools will be simple computer programmes for the prediction of the spread of pollution, data about dose-response relationships between pollution and its effects, etc.

5.7 National EIA Panels

National Panels should be formed to act as the focal points for EIA.

Training is clearly necessary in most countries before a significant start can be made with the implementation of EIA. Initially this training will have to come from outside, albeit from within the region. There needs to be a 'local' source of assistance, guidance, etc, and a channel through which external

help can come and be adapted to local requirements and conditions. It is proposed that a national panel be set up to act as the country's focal point for the development and encouragement of the practice EIA and for regional cooperation.

Such a panel would be made up of say 6-8 people from government, universities, research establishments, consultants, NGOs with environmental experience and/or responsibility for EIA. All will have a dual role in learning about EIA, contributing their knowledge of the environment and the procedures relating to the protection of the environment, passing on their existing/acquired knowledge and the experience that they have or acquire of the practice of EIA. The panel should eventually become self-sufficient and be able to arrange for any training to be carried out nationally. Panels should also be prepared to encourage national consultants to develop their expertise in EIA by forming joint ventures with organisations in other countries with experience of EIA. In this way a country can build-up its own resources and in the longer term become self-sufficient.

All countries will probably benefit from having such a panel. Some countries like Saudi Arabia and Kuwait are not likely to need external help. They will still need to provide training in EIA. They can also help other countries less advanced in the practice of EIA. Such a panel would be a convenient focus for this help.

The panel could advise upon and help to develop sectoral questionnaires. It could act as a clearing house for putting EIA practitioners in touch with the tools that they will need as the practice of EIA becomes more developed.

5.8 Regional Meetings of EIA Panels

From time to time regional meetings should be held for the chairmen of the National EIA Panels.

These regional meetings should plan the development of training and application, liaise in the setting up of data banks, share experience and act as channels for helping each other. In more detail they should consider how to help practitioners and decision makers to come to conclusions and decisions with limited environmental data and considerable areas of uncertainty.

5.9 Guidance in Reviewing EIAs

Decision makers should be helped in establishing the criteria for selecting review office staff and in training them.

The emphasis is naturally enough upon doing EIAs. It should not be forgotten that to be effective EIAs have to affect the decision making process. It is true that, in many countries, the majority of industry is in the public sector and that the doers of EIA are almost the same people who advise the decision makers. [In

passing it should be said that it would probably be wise to ensure that all EIAs are reviewed by a team independent of the 'doers'. It is recognised that qualified staff are often in short supply.] Even so the decision makers will need some help on how to react to an EIA report. Unfortunately the reports will not always be entirely understandable to a layman. The decision maker will need to know in his turn what to ask of the EIA team. If the decision maker has his own advisers who review and distil the results of the EIA for him, whether the original EIA was produced by another government department or by/for a private developer, his advisers will need to know how to review an EIA. Reviewing an EIA is not as easy as it sounds and in some ways is more difficult than doing one in the first place.

5.10 Training Schemes in Understanding EIA

Regional training schemes should be set up to provide the initial impetus to the understanding of EIA and the introduction of a simplified approach.

Individual countries are in need of help in getting started in the understanding and practice of EIA. Many of the 'National EIA Panels' will not themselves have enough understanding in the early days to properly develop their strategy or to impart understanding and practice to others. At the least one or perhaps two small teams of 2-3 people need to be created who can impart an understanding of EIA to fairly large numbers of people in a day. This is probably best done by leading small groups [10-15] through a simple EIA. Getting them to ask questions, encouraging them to wonder 'what if?', making them try to answer their own questions. A case study will need to be provided as the basis for this exercise so that answers can be given to the questions. It may be necessary to have more than one case study in order to provide each country in the region with an example appropriate to their industrialisation, climate, etc.

5.11 Material and Training in Arabic

All training sessions, case studies, typical questionnaires and as far as possible the literature and other material on EIA MUST be in Arabic.

It is evident from meetings and conversations that many if not most of those nationals likely to be involved in EIA do not speak English well enough to be more than passive and often uncomprehending participants. Indeed in some countries in Western Asia English is far from being the most common second language. With a new concept such as EIA, it is essential that the native language be used to convey the philosophy. At a practical level English can not be relied upon to avoid misunderstandings. The translation of material from English into Arabic is inevitable especially in the early days. Translation is however difficult and the more material that is created in Arabic the better.

6. ACTION PLAN

6.1 Introduction

This action plan is structured for the countries in most need of assistance. Throughout the region interest in and application of EIA ranges from nil to the sophisticated. In dealing primarily with the least advanced it is hoped that the structure of the proposals will also help the others.

6.2 Creation of more Environmental Awareness and Commitment

A number of countries need to be persuaded of the benefits of protecting the environment in order for them to invest more in avoiding environmental problems and more in removing existing ones.

Until this is done, the benefits of an improved approach to EIA will be minimal. This action is therefore URGENT.

It is difficult to criticise countries making an obvious attempt to improve their environmental organisations and indeed all countries are to be commended in this respect. Unfortunately experience suggests that institutional arrangements are sometimes a cosmetic exercise. This was confirmed in some cases by the impression given during the missions. Without distinguishing between those countries needing persuasion and those who should be encouraged in following a courageous path, help should be offered to Bahrain, Egypt, Iraq, Qatar, Syria, UAE and PDR of Yemen.

It is not the place of the report to suggest in detail how this should be done. However whatever is done must be done at the highest level. Primarily it is a matter of convincing countries that investment in environmental protection is either not expensive or that it rapidly produces benefits to the 'economy' taken as a whole which far outweigh any initial investment.

The action would seem to lie with UNEP/ROWA and ESCWA.

6.3 Encouragement to Form National EIA Panels

The formation of national EIA panels is an initial step [together with 6.4] in the encouragement of the development of EIA. It is therefore a joint first priority.

All countries should be encouraged to form a National Panel for EIA either to help themselves or to help others.

Potential chairmen of National EIA Panels need to be identified. The choice of a chairman would seem to lie between the head of a country's 'environmental office' primarily concerned with the application of EIA or with someone likely to take a leading role in training related to EIA.

Meeting of Chairmen should be convened in the form of a committee. Initial meetings should discuss, with a view to agreeing common ground, the following agenda:-

- composition of panels,
- programme of work,
- documentation of sources of help,
- encouragement of intra-regional assistance,
- establishment of regional training schemes in the understanding of EIA,
- coordination of national training programmes.

Later meetings could discuss:-

- typical developments and environmental situations that might be the subject of typical sectoral questionnaires,
- how to make do with limited data and how to make decisions when many of the EIA predictions are uncertain,
- how to acquire data without expensive equipment and time consuming surveys,
- how to involve the younger questioning professionals in the development and application of EIA.

6.4 Provision of Regional Training in Understanding EIA

This activity has joint first priority with 6.2.

Whilst the setting up of National EIA Panels will lead to their involvement in the development of regional training schemes, ground work will be necessary by way of sounding out potential training leaders and in establishing sources of finance, etc, in order to put forward sensible proposals.

ESCWA and/or sub-committee of the Regional Committee of National EIA Panels should meet with potential training leaders. There are three potential leaders who have so far been identified. At a corporate level there are the Kuwait Institute for Scientific Research and the King Abdel Aziz University in Jeddah. On an individual basis there is Professor M Kassas of Cairo University. The Department of the Environment in Jordan, the Environmental Protection Department in Kuwait, apparently the Land Use Planning

Committee in Iraq, and possibly the Ministry of Environment in Oman & the Dubai Municipality in the UAE, would also have valuable experience to offer although not professional 'trainers'.

It is suggested that ESCWA and/or a sub-committee of the Regional Committee of National EIA Panels convene a meeting of such potential leaders to discuss:-

- the 'syllabus' for understanding EIA,
- collaborative efforts,
- composition of one or two teams,
- broad programme of training sessions,
- location of sessions,
- need for and the nature of case study material,

Funding will have to be found for training in the understanding of EIA. This issue is outside the remit of this report. There will be setting up and running costs. It may be that the setting up and possibly some element of the running costs will need to be funded 'centrally'/regionally, eg, by GCC, UNEP/ROWA, ESCWA, or a regional fund set up by participating countries?

Case study material will need to be prepared. Following on from the above, case study material will certainly be required.

It is envisaged that each training session will last one day. During this day, the leader of the session will educate from the participants [10-15] the following:-

- What are the features of the environment [physical, ecological and social] that could be affected by a development?
- What are the features of the proposed development that potentially may affect the environment?
- What are likely to be the the significant interactions between the development and the environment?
- What are the ways in which the bad effects can be ameliorated and the good effects enhanced?

In the process of identifying the interactions the leaders may wish to utilise the matrix approach as a means of minimising the risk that no significant interaction is overlooked.

It will be necessary for the leaders during the session to supply some information about both the environment and the proposed development in order to maintain a practical base to the discussions. It may help for him to have two aides, one providing information about the environment and the other about the development. Later in the day these two aides could take on the roles more specifically of an NGOs concerned with safeguarding the

environment and of the developer.

NOTE: it will not be the aim in this session to teach people how to do EIAs, there will be no emphasis on tools of prediction [computer models etc], the intention is purely to provide an understanding of the objectives of EIA and to provide some understanding of the process of EIA.

The programme of training sessions will be fairly extensive. These one-day sessions should be provided for all professionals and decision makers involved or potentially involved in EIA or situations in which decisions affecting the environment have to be made.

In the year following a first session there will be at least one session in each country of Western Asia [even those advanced in the use of EIA have a number of people involved in development decisions who do not understand EIA]. It is anticipated that in the first year there will be 10-15 sessions each catering for 10-15 people.

6.5 Development of a Simplified Approach to EIA

It is clear that many countries will need a transition. Currently some have what is a very basic permitting process ensuring that a limited number of environmental regulations are met. They need to move towards a completely open approach taking into account and looking for all possibly significant environmental interactions. This is too big a step and a simplified approach is needed to bridge this gap.

A basic Planning Questionnaire has been identified as the first requirement. A prototype is provided in Annex 8.3 of this report. Individual countries should now take this and use it as they see fit to produce their own version to extend the scope of their permitting procedures.

The National Panels on EIA could help in doing this but it is primarily the responsibility of the public authority charged with 'managing' the environment.

Example Sectoral Questionnaires will be required. It is envisaged that sectoral questionnaires will be needed from time to time in order to ask more specific questions about a potentially significant industrial development or about a potentially sensitive environment. Some guidance would need to be attached as to what sort of answers to expect and indeed as to why some of the questions need to be asked.

It would help to get this approach underway if one or two examples were produced regionally.

These will probably have to be funded regionally, involving GCC/ESCWA/UNEP or a regional fund.

A regional data bank of Sectoral Questionnaires should be created. Once the need for sectoral questionnaires is established and their use initiated, further such questionnaires will be developed by countries for their own use. The results of this work should be pooled and stored at one or more regional centres. Eventually with the march of computer technology each country need only have its own micro-computer be supplied periodically with an up-dated disc. In any event a regional centre should undertake the task of providing such questionnaires as may exist, receiving new ones, updating old ones in the light of experience reported by users, etc.

Candidates for this are the Royal Scientific Society in Jordan especially as the Department of Environment in the Ministry of Municipalities and Rural Affairs is practising a simplified form of EIA and possibly KISR in conjunction with the Environmental Protection Department in the Ministry of Health in Kuwait.

Some regional funding will be required, eg, by GCC/UNEP/ESCWA or a regional fund.

Training in simplified EIA will be required. Following upon the training in understanding EIA, more specialised training will be helpful for those who will be carrying out the work of EIA.

At the time of writing this report it is of course not known what the response will be to the proposal to set up the National EIA Panels. It is possible and certainly desirable that, once EIA is sufficiently understood and the Planning Questionnaires produced, each country will be able to evolve its approach to EIA with little further external help.

However, it may be that some countries may need assistance in providing the training in simplified EIA. This would involve the preparation of case study material [it could be an extension of that provided for the Understanding of EIA sessions].

The training would need to include:-

- asking the right questions about the answers received to the planning questionnaire,
- making do with limited data,
- acquiring data without expensive equipment and time consuming surveys,
- documenting sources of help,
- making decisions in the presence of uncertainty.

The main action should be to encourage countries to do it for themselves.

6.6 Advice on the Staffing of EIA Review Offices

The writer is not aware of any systematic approach to this question anywhere. His experience is that when faced with reviewing an EIA most people tend to do a quick one of their own and see if they agree with the main findings. This will work in the beginning when EIAs are fairly simple but will rapidly become an inadequate approach as the EIAs concern themselves with the more complex issues of some modern industries and some of the more complex socio-economic factors.

A regional meeting should be held for the heads of offices reviewing EIAs. It is proposed that a regional meeting of 1-2 days be organised for the heads of review offices to discuss the selection and training of staff for those offices reviewing EIAs.

Some training for EIA reviewers will be helpful. It will be helpful to both the lay and technical reviewers of EIAs. Countries could however be expected to take the initiative for themselves. It is a problem in some countries who have been the recipients of full EIAs carried out by ex-patriate teams; they have not known what to do with them as presumably they appeared too complex to comprehend or they did not correspond with what they regarded as their environmental concerns.

Training would need to cover:-

- are the topics considered in the EIA appropriate? Are any superfluous? Are any significant ones omitted?
- are the predictions accurate?
- are the effects described in terms which are clear and likely to be meaningful to the decision maker and to those involved?
- are the conclusions valid?
- would it be reasonable for more to be done to ameliorate the bad effects or to maximise the benefits of the good effects?

3-4 one week courses would suffice in the first year or so. Some case study material will be needed but existing EIAs could probably be used.

EIA reviewers will be looking for some on-going support in their work. Countries in the region should be encouraged to help each other. When faced with an incomprehensible EIA report a country can either ask for it to be made comprehensible to them or seek the assistance of a more experienced country in reviewing. The National EIA Panels could play a valuable role here. The chairmen could make contact with each other in an informal way and possibly obtain assistance in a manner that would be more acceptable than a formal approach country to country.

ESCWA/UNEP should encourage the National EIA Panels.

6.7 Provision of EIA Material and Training in Arabic

Sources of translations of sufficient quality should be identified. It is essential that as much EIA documentation and data is in Arabic as is possible. ESCWA and UNEP/ROWA should liaise with the GCC and individual countries in ensuring that all training sessions, case studies, questionnaires, etc are produced in Arabic.

Technical translations are difficult. Sources of translations of sufficient quality should be identified. In any event the National EIA Panels should be encouraged to undertake the review of translated documents before they are finally published.

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8. ANNEXES

8.1 Summary of Findings

COUNTRY	LEVEL OF ENVIRONMENTAL			LEVEL OF EIA ACTIVITY					ORGANISATION	COMMENTS	
	A W A R M E N T S S N T	C O M M I T M E N T S N T G	P E R M I T T I N G	U N D E R S T A N D I N G	U S E S O F S I R M I P L S	R E S O U R C E S	E S E O L S	T E S O L S			
Bahrain	?	?	?	?	?	Y	X	Y	?	Y	Encourage
Egypt	X	X	?	X	X	Y	X	Y	?	?	Needs help
Iraq	?	?	Y	?	Y	Y	X	?	?	Y	Encourage
Jordan	Y	Y	Y	Y	Y	Y	X	Y	Y	Y	
Kuwait	Y	Y	Y	Y	Y	Y	?	Y	Y	Y	Can help others
Oman	Y	Y	Y	Y	Y	Y	?	Y	?	Y	
Qatar	Y	?	?	?	?	Y	X	Y	?	Y	Encourage
Saudi Arabia	Y	Y	Y	Y	Y	Y	?	Y	Y	Y	Can help others
Syria	?	?	X	X	X	Y	X	?	X	?	Needs help
UAE	Y	?	Y	?	?	Y	X	Y	?	?	Encourage
PDR of Yemen	?	?	?	?	X	Y	X	?	X	?	Encourage

This Table is of necessity something of a simplification; it is no more than an outline summary.

- Y = yes, it exists or is done
- ? = in part
- X = no, it does not exist or it is not done

8.2 Development Proposals Requiring an EIA

The following is based upon an informal draft list of development proposals to be subject to EIAs in Saudi Arabia. It was prepared by the Environmental Protection General Directorate in the Meteorological and Environmental Protection Agency [MEPA].

Proposals which:-

- could affect areas of high conservation value, including mountain areas, wetlands, wadis, coastlands, coral reef or coral islands, estuaries or lagoons, unique flora and fauna assemblages and those containing uncommon or protected species,
- could damage important historic, archeological, scenic, scientific or educational sites,
- involving utilisation and processing of forest resources,
- involving the selection of areas for special development, eg, major industrial or commercial centres, new towns and suburbs,
- involve major engineering works, such as transmission lines, pipelines, major roads railways, airports, ports, and those involving changes to wadis, impoundments, irrigation and drainage,
- involve plant and processes known to have a major potential to cause air or water pollution or noise,
- are cement works in which argillaceous and calcareous materials are used in the production of cement clinker and works in which cement clinker is ground,
- are ceramic works in which more than 2000t/yr of any products such as bricks, tiles, pipes, pottery goods, refractories, or glass are manufactured,
- are concrete batching works in which more than 2000t/yr of concrete or concrete products are manufactured by the mixing sand, rock aggregate, water and cement,
- are ferrous and non-ferrous works in which metal melting processes for casting and/or metal coating are carried out,
- are pre-mix bitumen works, in which crushed or ground rock aggregates are mixed with bituminous or asphaltic materials,
- are grinding and milling works in which rock, ores, minerals, chemicals or grain products are processed by grinding, milling or separating into different sizes by sieving, air elutriation or in any similar manner,

- are oil refineries in which crude oil is refined,
- are petroleum product storage and processing works where petroleum products are stored in tanks having a capacity in excess of 2,000m³; or where used oil is reclaimed or where grease is manufactured,
- are primary metallurgical works in which ores are smelted to produce metal,
- are scrap metal recovery works in which scrap metals are treated in any type of fuel burning equipment or electrically heated furnaces for the recovery of metal,
- are premises on which there is erected any fuel burning equipment capable of consuming either alone or in total more than 300kg/hr of combustibles,
- is any facility which, if uncontrolled, has the potential to emit to the atmosphere 100t/yr or more of air impurities,
- is any facility manufacturing pesticides, herbicides or other hazardous chemicals,
- is any facility involving the treatment of pollutants prior to and for the purpose of their discharge into any waters,
- involve the storage, treatment or disposal of wastes by means of any lagoon, pond, irrigation area, well, bore, quarry or trench,
- involve animal or poultry slaughtering and processing,
- involve marinas and any land-based buildings or works associated with them,
- involve mining,
- involve extractive industries,
- involve dredging and reclamation of any foreshore, lagoon or wadi,
- involve solid, noxious or hazardous waste disposal facilities,
- involve forestry operations.

8.3 Planning Questionnaire

A general description should be given under each heading, if only to demonstrate the absence of a significant effect. Where any effect is likely to be significant a full response to the more detailed questions should be provided.

It is the developer's responsibility to bring potential causes of impact to the notice of the permitting authority. If there is any doubt about whether a matter should be raised, it should be borne in mind that a problem arising later will create significantly more of a problem in the future than it would now. It might even mean the closure of the factory whilst remedial works are carried out.

Description of Project

Please supply the following details of the proposal:-

- location map, plans, details of zoning and surrounding land-use,
- details of any screening or 'buffer zones' between the project and neighbouring land-uses,
- description of the processes, flow charts indicating use of raw materials and emission and discharge of wastes and pollutants,
- infrastructure requirements, power, water, drainage, roads, etc,
- labour requirements, professional, skilled and unskilled; potential origin of this labour, training requirements,
- potential benefits to the locality.

Effluents

Will the project generate and discharge effluents, including suspended solids, which will:-

- overload the drainage system,
- contaminate, directly or indirectly, surface or ground water,
- harm the health of workers or the local population,
- harm shellfish beds , fishing grounds, etc,
- create nuisance in residential or touristic areas,

-?

If so, state and describe the points of discharge, average monthly & peak hour volumes & composition.

Gaseous & Particulate Emissions

Will the project generate and disperse gaseous and/or particulate emissions which will:-

- harm workers' health (consider noise as well),
- harm the health of the local population,
- Intearfere with nearby industry,
- reduce agricultural production,
- Create a nuisance [odour, dirt, etc] in residential or touristic areas,
-?

If so, describe the points of emission and state the average monthly & peak hour emission volumes and composition.

Wastes

Will the project generate and cause the disposal of wastes which may:-

- contaminate surface or ground water,
- contain toxic substances which would represent a hazard, if not immediately, then in the future,
-?

If so, describe and give volumes and composition of the waste and the proposed manner of its disposal.

Use of Land

Will the project destroy, prevent or prejudice the use of natural resources such as :-

- minerals,
- water,

- fertile soil,
- vegetation,
-?

or will it destroy, prevent or prejudice the use of the land for other purposes which may be beneficial to the nation such as:-

- agriculture,
- residential development,
- other industry,
-?

If so, describe the opportunities that would be foregone.

Socio-Economic Factors

Will the project by its demands for labour and services or by the economic benefits flowing from it:-

- create an influx of immigrants,
- disturb the local communities or change their character,
- conflict with local ethnic or religious customs,
- overload existing infrastructural services (housing, schools, health care, water supply, drainage, shops, etc),
- attract significant labour from existing activities,
- create significant secondary development,
-?

If so, describe the labour needs by type, possible sources, etc , economic flows by magnitude and recipients (local labour, services, shops etc) and describe the local economy, social structure, traditions etc.

Special Features

Will the project interact with any special features of the locality eg:-

- scientific,
- geological,

- cultural,
- historic,
- religious,
- agricultural,
- ecological,
-?

If so specify, describe and discuss.

Reverse Impact

Will the project be affected by for example:-

- pollution from nearby industry,
- a shortage of infrastructural support (roads, sewers, etc),
- a lack of appropriate labour (skills, cultural background, training, etc),
-?

If so, specify and discuss.

General Guidance Notes

Significant effects should be described in detail and evaluated in terms which will be meaningful to lay decision makers and to the communities concerned as well as to other professionals.

In addition, measures, which are proposed or which could be taken to minimise adverse effects and to maximise beneficial ones, should be described and discussed in the context of the costs involved.

Throughout the level of detail required reflects the stage of planning which the project has reached and the level of decision being made, ie the level of detail must be such as to permit decisions to be made in the light of the environmental issues relevant to those decisions. For example when choosing the site only the most important characteristics of the process and the broad possibilities for pollution control will be relevant. At the design stage precise details will be required to approve the specification of pollution control equipment.

NOTE: This questionnaire should be modified and augmented as priorities change and develop. It should be regarded as a start and a basis for further development by those involved in the

planning and management of industry.

On a project basis it can and should be modified and augmented, especially after an initial assessment. That is why spaces have been left under each heading for additional questions relating to further features & factors.

8.2 Situation in Egypt

The Egyptian Environmental Affairs Agency [EEAA] was set up in 1982 by presidential decree. The EEAA reports directly to the Prime Minister's Office. The Prime Minister has authorised the EEAA to review all development projects and to effectively have the power of vetoing any proposal of which it does not approve.

It was not actually formed until late 1985 and its chairman appointed until July 1986. The chairman is still the only established professional; all others are seconded from other ministries. There is a central staff of about 50 and in addition there are [will be?] offices in all the governorates and in some ministries. The central unit has four sections dealing with:- air, water, soil and protected areas.

EEAA will require an EIA from EVERY developer. It was preparing a questionnaire and/or a 2 page set of requirements for the EIAs; it accepted that eventually a version of a questionnaire would be required for each major industry. There is no doubt that the Chairman of the EEAA is committed to the implementation of EIA. The doubt is whether there are more than a few people in the EEAA and elsewhere who understand what EIA is. Most thought that EIA was a means of ensuring that regulations regarding pollution control and effluent standards were being met. There was some confusion with EIA being used both for the work preparatory to a 'State of the Environment' report and for the appraisal of proposed developments. EEAA were seeking support for an 'Aberdeen' type course for senior government professionals in Egypt and elsewhere. The EEAA seemed unconcerned that developers would need people capable of doing EIAs.

There are currently 15 organisations who license new industrial developments. The main ones are in ministries. About 60% of production is in the public sector. The majority of this is the responsibility of the General Organisation of Industrialisation [GOFI] within the Ministry of Industry. GOFI carry out production planning and pre-feasibility studies. A promising project will have a feasibility study carried out by a consultant which GOFI then reviews. GOFI also license private national development in parallel with the Governorates.

GOFI have a Bureau of Industrial Environmental Management [2 staff?] and an Environmental Protection Department [9 staff] which advises on pollution control. It is not aware of any industrial EIA in Egypt [although EEAA say that GOFI do EIA!]. GOFI intend that shortly they will have prepared a summary of the UNEP/ESCWA EIA guidelines tailored to Egyptian needs. GOFI considered that there was a need for a greater environmental awareness on the part of those licensing development [ministers and senior assistants], more detailed training for those in GOFI, EEAA, etc, who would be reviewing EIAs and that consultants should be encouraged to set up joint ventures with ex-patriate organisations experienced in EIA.

The Law 48 of 1982 made regulations designed to protect the Nile and other waterways from pollution. Decree 380/82 authorised the

Ministry of Industry to provide pollution abating equipment. It has not been implemented because of a shortage of funds.

There is no zoning and little land-use planning [except for new towns and agriculture]. The ownership of land and a licence are usually sufficient for a developer to be able to proceed. Licences do however specify that there must be no pollution beyond the regulated levels and that the developer must 'take care of the environment'. There has however been a tendency to attract foreign investment on the basis of a certain freedom to pollute. At the moment there is not much new development. More attention is being paid to reducing existing levels of unwanted pollution. However shortages of funds, poor maintenance, lack of expertise, over stringent regulations were all given as reasons for lack of compliance with the regulations.

The Ministry of Health is developing extensive laboratory and monitoring facilities at their Environment and Occupational Health Centre. The Centre covers toxicology, water, air, occupational health, pesticides, heat stress, audiometry and radiation. It is still in its formative stage and has not yet been formally opened. It has acquired [with the assistance of USAID & WHO] a wide range of equipment. Staff numbers are short because of restricted allocations, shortage of specialists and the need to send staff away for training.

Air pollution monitoring [financed by EEAA] is underway in the six most industrialised of the 27 governorates. Again financial restrictions are limiting the coverage. The Ministry of Health report no serious problems apart from dust in urban areas. Water pollution monitoring has just started along the Nile [on behalf of the Ministry of Agriculture and Irrigation]. Although it is illegal almost all factories along the Nile discharge untreated waste. The environmental regulations are not enforced for fear of losing valuable production. Analyses of waste is carried out on an ad-hoc basis to see if industry is complying with the regulations. The Centre has commissioned a study to develop a micro-computer based data bank.

There is a lot of talent related to the environment but little or no understanding or experience of EIA in Egypt. There also seems to be little consciousness of the importance of the environment to the economic well-being of the country. An indication of this is the lack of commitment of funds to the clean-up of the Nile, the almost universal lack of enforcement of existing pollution control requirements and the disrepute in which existing laws were held. It will be necessary to enhance the awareness of and the commitment to the environment at a decision making level before EIA will have any chance to influence decisions.

There is no obvious centre able to help directly with a programme of training related to EIA. Professor M Kassas of Cairo University is however an international figure on the environmental scene and ought to be involved in some way with EIA.

8.3 Situation in Iraq

There is an Environment Protection Council chaired by the Minister of Health. It is comprised of members of involved ministries. However under a new law [76/1986 Environmental Protection] a High Environment Council is being formed. Again the relevant ministries are represented but at the level of Directors General and above. The Council will also coopt 4 experts. Major decisions will still have to be ratified by the Vice President [even at DG level they can not commit their ministries]. An environmental Protection Council will be set up in each governorate.

The new law enables the HEC to plan environmental protection, produce guidelines and regulations, decide upon recommendations by the Environmental Health Department, propose punitive measures, incentives and indeed to cause third parties to be compensated where they are affected, approve plans of the Director of Environmental Health and represent Iraq internationally.

The Directorate of Environmental Protection will consist of:- Environmental Engineering, Laboratory, Surveys and Research, Environmental Awareness, Radiation protection. It will carry out studies, propose solutions, monitor pollution, help in siting, research, propose international agreements, propose plans, study use of natural resources, follow up HEC decisions, propose emission limits, etc, carry out EIA studies.

The current permitting procedure requires that the Director of Environmental Health give his approval. His Environmental Engineering Department looks at proposed sites, checks upon proximity to houses, aquifers, agriculture, etc, the classification of land, wind direction, etc. Consideration of water is limited to chemical properties rather than directly the wellbeing of fish. Anti-pollution measures are discussed and agreed to achieve the desired stream quality.

Each authority is formally asked for its views but the Ministry sometimes convenes an ad-hoc meeting to consider a proposal and to come to a joint view as to the impact, the constraints necessary, etc.

All public sector projects are reviewed, but some of the smaller private sector projects slip through unchecked.

The Environmental Engineering Department has limited resources and staff will be even shorter when offices are set up in the governorates. The Department currently has a staff of about 20, mainly engineers and environmental health. It has sections dealing with:- Air, noise, water, industrial wastes, water resources, environmental sanitation and planning & land use. It has a questionnaire which asks for:- an EIA re pollution, relationship to other industries, plans etc, data re wind & climate, consumption of water, wastes, emissions, etc, treatment and proposed methods of disposal, noise. The Department uses the WHO 'Rapid Assessment'.

This questionnaire is used in the context of a broader one used

by the Land Use Planning Committee attached to the President's office. Full details of this are apparently confidential. Its technical secretariate is however multi-disciplinary and vets all proposals for development. Its questionnaire covers, in addition to the type of questions used by the Ministry of Health, the following:- jobs created, sources of staff [professional, skilled, unskilled], training needed, social background of the area [religious beliefs, communities, the Ministry of Planning has sociologists/ anthropologists], local economic factors, details of buffer zones, screening etc, raw materials, infrastructure needs and any other relevant information. Whilst it was not possible to get any direct information about how the Land Use Planning Committee worked in practice, it sounded as if the elements of quite comprehensive EIA are considered in reviewing development proposals.

At the moment there are a limited number of new developments because of the war. Most attention is focussed on cleaning up existing industry. New industrial projects are looked at in three stages.

- A pre-feasibility study primarily concerned with site location. The Environmental Protection Council is informed and other ministries asked for their comments. There does not appear to be any attempt at this stage to consider the various siting factors in an interactive way.
- The specification of the project detailed requirements. Pollution standards are used if available in the following order of preference:- Iraqi, international, national for the country of the contractor. The standards are always qualified as being applied to local conditions.
- The successful tenderer's design is checked.

It was suggested that sectoral questionnaires for the chemical, petro-chemical, power and mineral extraction industries would be useful.

8.4 Situation in Jordan

A Department of Environment has existed within the Ministry of Municipalities and Rural Affairs for a number of years. A new law was proposed giving the Ministry the powers to coordinate the environmental aspects of the licensing procedures. This has not been agreed. However, the existing system, under which the Department of the Environment is consulted and has more limited powers, seems to work quite well.

The Department has about 10 staff with a variety of disciplines [architecture, town planning, engineering, geology, geography, economics, agricultural engineering]. It is organised in 5 sections concerned with the protection of :- land, air, water, and nature and with information & education. In the future it is hoped to have 'branch' offices and to add sections dealing with the health environment, survey and drawing.

Since 1980 all new industry is required to have a licence from the Ministry of Industry. This is issued conditional upon the developer complying with specific regulations which will be formulated based upon the law and any general regulations which may exist [they do for water, drafting is in hand for air].

These specific regulations are agreed by a General Safety Committee which meets on an ad-hoc basis. It includes representatives from various ministries of Industry, Health, Municipalities & Rural Affairs, the Royal Scientific Society and the Nature Resources Authority. These specific regulations are site specific. A team from the Department of the Environment visits the site and assesses its sensitivity. On the basis of this 'impact assessment' the specification of limits for emissions and discharges are made.

Licences are also subject to qualification by the Ministry of Health and others. The Ministry of Health seems to cover much of the same ground as the Department of Environment. It issues a questionnaire and asks for details of land zoning, a plan of the development, a process flow chart and details of the waste treatment. The answers which provide information about emissions etc, must be signed by the owner. If subsequently the proves to be an omission or a need for a variation then the owner must apply for a new permit. The Environmental Health Department in the Ministry acts as the technical secretariate for the Environmental Protection and Industrial Licensing Committee. This has representaives from the ministries of Health, Municipalities, Labour and of the Municipality of Amman, Royal Scientific Society & the Water Authority. The Department visits the site and considers the environs and the impact upon residents, agriculture, air, water, etc.

Jordan has few rivers and relies upon ground water which is in need of protection and improvement. New factories are effectively controlled; existing ones are more of a problem, especially a

number of the smaller pre-1980 factories. They are required to have a water treatment plant but they are not always in use and are not usually of sufficient quality. There was some suggestion that the standards were too high. Random checks are made and pressure is applied to improve their performance. There is limited inspection manpower. Environmental awareness in the older industries is low. However, on the whole Jordan is a law abiding country and where specific regulations are made they are enforced.

Jordan's is a mixed market economy. Industrial planning covers the public sector and the promotion of ideas for the private sector to take up. In the last 18 months some 174 licences were issued for medium/large projects, averaging 35 employees. Of these only 5 were significantly polluting [mostly chemical]. The other major source of problems was the food industry. In the next 5 years it is expected that there will be further development in the phosphate, engineering and food industries. New industrial estates will be created and it is expected that an intermediate chemical industry will be started. Overall a significant amount of new industry is anticipated.

The Royal Scientific Society has been carrying out monitoring of water pollution for the past 6 years on behalf of the Department of Environment. It is now starting on air pollution. The Society also has experience of computerised data banks. It is probably oriented too much towards science and measurement to play any role in training associated with simplified EIA. The Department of the Environment has practical experience of simple EIA and could make a contribution.

A draft law [see first paragraph] exists for the protection of the environment. It covers human, animal and plant health and all that is related to the health of living beings in the environment. It would form a Supreme Council on Environment. The Chairman would be the Minister of Municipal & Rural Affairs and the Environment; the Secretary General would be the Director of the Department of Environment; its members would be undersecretaries in the involved ministries and others concerned with planning, tourism, natural resources, water, universities. The Supreme Council would take charge of environmental planning objectives and plans, approve new laws & regulations, participate in developing a strategy for education. The Minister would be responsible for:- approving and coordinating programmes & follow-up, supervising the Department of Environment, implementing decisions of the Supreme Council, referring contraventions to the courts, approving licences relating to the environment. The Law would make any discharge, etc, illegal unless it conformed with the regulations. The Law refers specifically to the protection of air, water, land and natural resources, plants, the marine environment, reservations and National Parks and to the use of pesticides.

The Department of the Environment would:- assess impact, study plans for industry, agriculture & infrastructure, prepare policies, strategies & tactics, participate in drawing up specifications, criteria, supervise the implementation of the law, coordinate the use of laboratories, supervise environmental control, propose standards, introduce licensing, represent Jordan.

8.5 Situation in Syria

Environment in Syria became a problem after the rapid expansion of industry post 1971. A 1972 decree set up industrial safety departments to prevent and reduce pollution. In 1984 permissible limits in the air were promulgated for 180 toxic substances.

Prior to 1985 environmental responsibilities were spread over many ministries without any coordination. In mid 1985 a start was made to remedy this and a minister [without portfolio] was appointed to look after environmental affairs on a supra-ministerial basis. He is to be assisted by an 'Environmental Agency' located in Prime Minister's Office.

The role of the new Agency will be to coordinate, observe and direct the activities of the various ministries affecting the environment. It will probably have its own inspectors [in addition to those of other ministries] but will not be an executive agency. Currently the staff of the Agency is 4.

A High Committee for Environmental Affairs has been formed comprising deputy ministers [all technical professionals] from the involved ministries. It meets on an ad-hoc basis, eg to consider the draft of a new law. In general it has limited powers and can only recommend action to the Council of Ministers [eg a new law, the closure of a major factory].

The draft new law provides for the Environmental Agency [which can have its own offices] and for subsidiary laws to be attributed to it.

Similar committees to the High Committee have been set up in each of the 13 districts of Syria. A number of sub-committees to the High Committee have also been formed. About 300 government personnel, academics, etc, are involved. At the moment the strategy and programme for each sub-committee are being drafted and coordinated. The strategy includes predicting what will happen in the years 2000 and 2025 and seeing how trends can be influenced to avoid the bad results of development. The sub-committees are:- health, air, water, sanitary engineering, scientific research and technology, nuclear safety, soil protection, urbanisation, man and the biosphere [protected areas], general relations.

The next 5 year plan for Syria includes:- sewage treatment plant for the main cities, greening of the desert around cities, the reduction of lead in petrol and a regional plan for population distribution. There are also proposals to clean up some of the older factories.

It was suggested that Syria had enough professional resources to tackle its environmental problems but that they had yet to be organised.

Some monitoring had started in relation to coastal waters and

water quality.

There were some NGOs in Syria concerned with the environment and the sub-committee on general relations was trying to involve young people.

Some 80% of industry is in the public sector. Many ministries can currently sanction development but it is unlikely that they take a systematic account of the environment. The Ministry of Industry had however set up a small committee concerned with pollution control. It had an Environmental Affairs adviser. He is keen to introduce and to use EIA together with the UNEP guidelines. However he appears to have no staff and no formal input to the permitting process. He welcomed the possibility that sectoral questionnaires might be developed; he suggested that it would be useful to include examples of the reasoning behind some of the questions and of what sort of answers one should expect. He considered that all training had to be in Arabic. Many professionals had done degree courses in non-english speaking countries [Russia, Germany, etc] and English could not be assumed to be a common second language.

All new factories have some pollution control. Existing factories are generally small. Some pollution control has been introduced although it is often difficult to find space for treatment plant .

A draft law for water pollution control is in the President's Office which will require industry to have a permit for the discharge of effluent. It will also allow the Ministry of Irrigation to issue guidelines which it is hoped will become standards. These will be based upon water quality standards appropriate to specific rivers, etc. Permitted discharges will depend upon the existing levels of pollution. Fairly extensive monitoring exists and the introduction of more is in hand.

There is no obvious focal point for environmental training although there were a number of people who could be involved. The knowledge of EIA is very limited. In spite of the efforts being made it is likely that as yet the level of environmental awareness is low.

8.6 Persons Met

8.6.1 Bahrain

Ministry of Health

Khalid M Fakro

Deputy Chairman,
Environmental Protection Committee
also Director, Marine Emergency
Mutual Aid Centre [MEMAC]

Bahrain National Oil Co

Derek J S Brown

Coordinator, Environmental Affairs

United Nations Environment Programme

Salih Osman

Director,
Regional Office for Western Asia

8.6.2 Egypt

Egyptian Environmental Affairs Agency:-

Dr El Mohamadi Eid
Dr Feisal A Esmael
Dr Sami E Salim

Chairman
Scientific Adviser
Consultant, Cabinet of Ministers

Environment & Occupational Health Centre, Ministry of Health:-

Dr Ahmed Shaker

Director

Bureau of Industrial Environmental Management, General Organisation of Industrialisation [GOFI]

Ahmed Amin Ibrahim
Mustafa Barghash

Head
Assistant

El Nasr Leather Tanning Co.

El Nahas Abdel El Aziz
Eng Abdal Aziz Koff

Technical General Manager
Chief, Pollution & Research

United Nations Development Programme

Ashraf Shams El Din

Project Officer

8.6.3 Iraq

Ministry of Health

Dr Felix J Jurji

Director General,
Preventive Medicine & Environmental
Health.
also Secretary General,
Environmental Protection Council

Environmental Engineering Department, Ministry of Health

Miss Najat Wadi Bashir
Miss Suad Hassan

Chemical Engineer
Chemical Engineer

Ministry of Industry & Mines

Tawk Ismael Ahmad
Ahnaf Kumait
Dr G A ~~W~~ Derwish
Mohammed Shukri
Yassin

Director General
Expert
Expert
Head, Studies Department
Chief Engineer,
Environmental Pollution Control
Chemist, Dept Industrial Pollution

Miss Kawakib Jabir Saad

United Nations Development Programme

William H Chapman

Expert Sanitary Engineer

United Nations Economic & Social Commission for Western Asia

Dr Ahmed Hamza

Chief,
Environmental Coordination Unit

8.6.4 Jordan

Department of Environment, M'istry of Municipalities & Rural Affairs

Dr Sofian Entil
Suleiman E Hanbali
Gazi Odat
Eayasin Zoubi

Director
Land Use Planner
Chief, Air Pollution
Agricultural Engineer

Ministry of Health

Eng M H Dajani

Director, Environmental Health

Ministry of Industry & Trade

Dr Akram Jamil Karmoul

Director of Industry

Industrial Chemical Department, Royal Scientific Society

8.6.7 Qatar

Environmental Protection Council

Abdul Rahman M J Al-Thani	Vice Chairman, also Director, Industrial Development Tech. Centre
Abdel Rahman Al Ansari	Deputy to Secretary General

Industrial Development Technical Centre

Eng Nasser Al-Mansorri	Engineer
Dr Shapli Yunis	Expert, Air Pollution, Um Said

United Nations Development Programme

Abdul Rahman Abdullah	Resident Representative
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8.6.8 Saudi Arabia

Environmental Protection General Directorate, Meteorological & Environmental Protection Administration

Dr Mustafa	Director General
Dr Abdel Aleisa	Head, Human Ecology
Daryl Lacey	EIA
Robert Zerbania	Air Pollution
Dario J Dal Santo	Water Pollution
Stanley E J Mather	Toxic Wastes

Ministry of Municipalities & Rural Affairs

Mohammed Alesa	General Director, Environmental Health
Ahmed Al-Nuaim	Assistant General Manager, Env Hlth

Faculty of Meteorology & Environmental Studies, King Abdel Aziz University, Jeddah

Dr Onar Al-Sabbak	Dean
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Man & Environment Department, Gulf Cooperation Council

Dr Abdel Aziz Al-Jalal	Director General
Ahmed A A Al-Senany	Environment Specialist, Environmental Protection Department

8.6.9 Syria

Putative 'Environmental Agency', Council of Ministers

Hisham Ourfali	Consultant for Environmental Affairs, to 'Minister of Environment'
Abdul Rasak Sarfarjelan	Chemical Engineer
Risslan Ashi	Civil engineer

Ministry of Industry

Dr Sharaf Mastruk	Advisor, Environmental Affairs
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Ministry of Irrigation

Eng Saad Alhab Shawaf	Director, Water Pollution Control
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8.6.10 United Arab Emirates

Technical Secretariate
Higher Environmental Council

Dr Abdul Wahab Al Muhaideb	Assistant Undersecretary M o Health Deputy Chairman Higher Env. Council
Dr Ahmed Saif Mohammed bel Magoon	Director
Mahboub Hassan	Micro-biologist
Ibrahim	Member
Saad Al- Numairy	Member

8.6.11 PDR of Yemen [1984]

Ministry of Industry

Fadhle Hassan Yehia	Assistant Deputy Minister [Planning]
Eduardo Vega Bayon	UNDP/UNIDO Project Manager
Ali Mohamed Nasser	Director, Maintenance & Industrial Safety Section, Production Dept.
Orabi	Head, Feasibility Studies Dept.
Salem Ammari	Director, Cement Project
Saleh Kouli	Projects Implementation Dept.

Ministry of Public Health

HE Abdullah Pukair	Minister of Public Health, Chairman, National Environment Council
Abdul Samad Taresh	Secretary,

Dr Gazi Ismail
Mrs Raga Suleiman Ahmed

National Environment Council
Assistant Deputy Minister
Head, Nutrition and Food Laboratory

Capital Municipality

Badr Mohamed Nagi
Obaid Hussein Khayali

Director, Environmental Health
Deputy Director, Environmental Health

Ministry of Construction

Dr Abdul Kader Baharon

Head, Town Planning

United Nations Development Programme

Wannop

Resident Representative

8.7 Executive Summary

During this and previous related missions, 11 of the countries of Western Asia were visited. The situation and organisations relating to the environmental impact assessment [EIA] of industry were reviewed.

In the region the level of application of EIA varies enormously. In some countries the practice is quite sophisticated but in others it is non-existent. Further, in some cases there is little or no consideration of environmental matters in the permitting procedures for licensing industrial development; there is little real evidence of environmental awareness and commitment.

A greater awareness of the benefits to the economy of environmental protection and a greater understanding of EIA must precede a significant improvement in the application of EIA to industrial planning. There is a great need for a wider understanding of EIA even in those countries where the practice of EIA is relatively advanced.

The understanding of EIA and its implementation will be greatly facilitated if national panels are formed to act as focal points for EIA. They can help in international cooperation in training designed to improve both the understanding and practice of EIA and in the pooling of data and resources. Nationally they can be a point of reference and a channel of communication to a wider body of experience and knowledge; they can also provide a continuity and a back-up following any training especially where that training was provided by people from outside the country.

The panels would be comprised of environmental professionals from government, industry, universities, etc. To begin with they would not necessarily know much about EIA; they would be the first to learn!

It is vital that all training and material related to EIA be carried out and be produced in Arabic. The majority of involved professionals do not either have English as a second language or do not speak [read or write] it well enough to fully participate in training carried out in English.

The introduction of EIA in countries will be aided by initially adopting a simplified approach. It is recommended that this take the form of a planning questionnaire covering the basic environmental factors and the basic characteristics of industrial developments. In those cases where the answers lead to concerns about the environment there will often be the need for supplementary questioning. In the course of time supplementary questionnaires will be developed for specific industries which are likely to significantly affect the environment and for specific sensitive environments. The initial development of these, so-called sectoral questionnaires, could be aided by ESCWA/UNEP.

It is proposed that a regional data bank be created which will build up a range of these sectoral questionnaires relevant to the region. In building up this collection, the data bank will draw upon the work of individual countries and disseminate the results to others with similar problems.

An action plan has been produced covering the above recommendations. It also includes consideration of the need to review EIAs in the context of decision making, the ways in which ESCWA/UNEP might help the move forward, the scope and subject matter for training and makes suggestions about who might do the training and be hosts to the data bank.