



Accreditation of Environmental Consultants



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1. INTRODUCTION

The National Impact Assessment Programme (NIAP) was initiated as a partnership between the Government of Pakistan (GoP) and the International Union for Conservation of Nature (IUCN), to contribute to sustainable development in Pakistan through the strengthening of the Environmental Impact Assessment (EIA) process and introduction of Strategic Environmental Assessment (SEA) in planning processes at the federal and provincial levels. Implementation partners include the Environmental Protection Agencies (Federal, Punjab, Khyber Pakhtunkhwa, Sindh, Balochistan, Azad Jammu and Kashmir, and Gilgit Baltistan), the Environment Wing (EW) of the Ministry of Climate Change (MoCC), the Planning Commission of Pakistan (PC) and IUCN Pakistan. The Netherlands Commission for Environmental Assessment (NCEA) provides technical guidance and support to the project. The funding for the project has been provided by the Embassy of the Kingdom of the Netherlands.

The EIA was introduced as a legal requirement in Pakistan in 1983 with the promulgation of Pakistan Environmental Protection Ordinance 1983. This ordinance, however, lacked implementation mechanism and largely remained unenforced. The use of the EIA as a serious planning tool started with the enactment of Pakistan Environmental Protection Act 1997 (“PEPA 1997” or the “Act”). The Act made it mandatory to undertake environmental assessment of development projects and proposed penalties for failing to meet the requirements. The implementation mechanism and procedure was defined first through guidelines¹ and subsequently by the Pakistan Environmental Protection Agency Review of Initial Environmental Examination and Environmental Impact Assessment Regulations 2000 (“IEE-EIA Regulations”).

As is the practice worldwide, the EIA reports are being prepared by consulting firms. Starting from a handful of individual consultants, the National Directory of Environmental Consultants, 2004² listed 38 consulting firms located mainly in Karachi, Lahore, and Islamabad. The qualification and experience of the staff undertaking the environmental assessment and quality of the consulting firms vary considerably. It is widely recognised as a key weakness in the EIA system of the country.

¹ *Policy and procedures for the filing, review and approval of environmental assessments, November 1997*

² Pakistan Environmental Protection Agency, <http://www.environment.gov.pk/new-pdf/DEC.pdf>, Accessed January 2013



Bobbi Schijf, NCEA speaking at the consultation, April 2014.

It is one of the objectives of the NIAP to change this by facilitating the creation of a national accreditation system for the EIA consultants, and making this information available to any organisation requiring an EIA. To accomplish this, a study was commissioned by the IUCN to explore the status of Pakistan's EIA review process. The terms of reference are included as **Appendix A**.

A draft report was prepared earlier³ which was followed by a consultative workshop in Islamabad on April 16th, 2013. The minutes of the workshop are included as **Appendix B**. A second meeting was held on September 5th, 2013. The minutes of this meeting are included as **Appendix C**. This document presents the revised report of the study prepared in the light of the comments received from the participants of the consultative work.

1.1 Objectives of the Study

The objectives of this study are to:

- Explore relevant accreditation practices globally (e.g. India and USA) in environment and other disciplines;

- Set out key options for accreditation systems, pros and cons of each, and conditions needed for such systems to function;
- Present key options at a suitable discussion forum (to be decided), facilitate discussion and decision on the most promising and suitable certification approach for Pakistan; and
- Develop a more detailed proposal for the establishment of an accreditation system for the EIA consultants in Pakistan, based on the approach chosen at discussion, including recommendations on housing options for the accreditation system.

1.2 Organisation of the Report

The report is organised in five sections. Following this section, the context of the review is discussed in **Section 2**. This is followed by examples of accreditation systems in **Section 3**. Options for accreditation schemes are discussed in **Section 4**. Based on these reviews the recommendations are provided in **Section 5**.

³ National Impact Assessment Programme: Accreditation of Environmental Consultants, First Draft, HBP Ref: D3A01RAE, February 19, 2013.

2. THE CONTEXT

2.1 The Need for Accreditation

In the EIA related activities undertaken by NIAP, the lack of a formal accreditation system for EIA consultants has been identified several times at different forums as a key weakness in the Pakistani EIA system. The issue of the quality of EIA consultants has been mentioned in almost all EIA mapping workshops—national and provincial, as a hindrance in the effective implementation of the EIA system in the country. As currently there is no procedure in place to ensure appropriate qualifications of an EIA consultant, this is identified as one of the reasons for sub-standard EIA reports produced in Pakistan.

Environmental Impact Assessment⁴ is a systematic process that examines the potential impacts of development projects in the environment. It is a planning tool designed to incorporate the concept of sustainable development into the mainstream decision-making process. It is formally defined as “the process of identifying, predicting, evaluating and mitigating the biophysical, social, and other relevant effects of development proposals prior to major decisions being taken and commitments made.”⁵

For the EIA to meet its objectives and contribute towards effective decision-making there are three main steps:

1. Development of an EIA which meets the requirements;
2. Establishment of an effective review mechanism to ensure that the EIA meets its objectives; and
3. Setting up a systematic follow-up programme to ensure that the proposed measures in the EIA are implemented.

The scope of this document is limited to Step 1. Development of a quality EIA - an EIA that meets the requirements - entails a certain level of expertise within

⁴ Various organisations and regulatory agencies apply different names to the EIA process and report. These include, for example, Environmental and Social Impact Assessment, Environmental Assessment, and Environmental Impact Statement. While the name may differ the broad objectives of these are similar.

⁵ International Association for Impact Assessment. *Principles of Environmental Impact Assessment Best practice*. Jan 1999.

the EIA team. A quality EIA can only happen if the consulting firms have professionals of the required expertise and with the necessary qualifications.

As it happens in most of the developed countries, market forces ensure the production of quality EIAs. There is a demand for quality EIAs; the stakeholders are aware of the requirements; and the regulatory authorities have the necessary resources to effectively review the documents. If the consulting firm does not have the required professional staff and the EIAs are, hence, substandard, the business of the firm is affected.

In developing countries like Pakistan, market forces do play a role but they are not sufficient to ensure the production of quality EIAs due to a lack of awareness among stakeholders and poor EIA review mechanism. It is therefore sensible to set minimum standards for the consulting firms and have a mechanism to enforce these. Indeed, this will not be the only measure and other measures such as public awareness, strengthening of the regulatory regime, and improvement in the EIA review mechanism will be required. These are, however, beyond the scope of this document.

There are various other possible options available in this regard both in the public and private sector for accrediting or registering EIA consultants. These will be further discussed during the accreditation system development.

2.2 Objective of the Accreditation Mechanism

The objectives of the having an accrediting mechanism may be as follows:

1. Set a minimum qualification for the team or individuals who are to undertake the EIA in

order to bring uniformity and consistency in EIA reports and hence improve their qualities;

2. Help the project proponents in selecting consultants with appropriate qualification-

The client should study the proposed project and its engineering needs so that it is known what is required from and expected of the consulting engineer. Selection of a consulting engineering firm should be guided by one primary consideration—the qualifications of the consulting staff for the project to be undertaken....The client should approach the selection of a consulting engineer with the same attitude that would apply to the choice of a doctor or lawyer. Skill, availability, reputation and experience are all factors to consider...

—Wisconsin Association of
Consulting Engineers
1991-1992 Directory

As described in the above quote, selection of the consulting firm requires more than a mere directory of consulting firms. One way of providing the additional information on the consulting firms and individual consultants is an accreditation system that directly or indirectly provides information on the qualifications of the consulting staff; and

3. Differentiate between standard and sub-standard consulting firms and hence give the better firms a marketing edge.

3. EXAMPLES OF ACCREDITATION SYSTEMS

There are various types of accreditation systems for professional organisations worldwide. The differences in these systems are manifested in the type of organisation - private, public, or professional association - or in being developed to meet a mandatory or voluntary requirement. In this section some examples of such systems are provided.

3.1 Institute of Professional Environmental Practice

The Institute of Professional Environmental Practice (IPEP)⁶ is a United States-based independent, not-for-profit certifying organisation for Qualified Environmental Professional (QEP) and the Environmental Professional Intern (EPI) certifications. IPEP's stated mission is to improve the practice and educational standards of environmental professionals around the globe through administration of these multi-disciplinary certification programmes.

3.1.1 Coverage of IPEP

IPEP has a membership of over 1,000 professionals in the environmental sciences. Six major environmental organisations also actively support IPEP and its QEP certification.

IPEP provides individual certification through a rigorous application and examination process to demonstrate a broad understanding of the environment and environmental issues. In addition to knowledge, QEP certification also emphasises in a strong commitment to excellence in applied environmental science and adherence to a strict code of ethics.

3.1.2 History

The Qualified Environmental Professional (QEP) certification programme evolved out of an interest among members of the Air and Waste Management Association (AWMA) in a broad-based credential. AWMA created a Certification Steering Committee in 1990 to research existing certifications and formulate a report on its findings and recommendations. A survey was conducted in the spring of 1992 among both AWMA and non-AWMA members which indicated overwhelming support among environmental professionals for a broad-based, over-arching environmental credential. Following approval by

⁶ <http://ipep.org/>

the AWMA Board of Directors, in March of 1993 the Steering Committee was incorporated to become the Institute of Professional Environmental Practice (IPEP), an independent, not-for-profit body. The Steering Committee members became the initial Board of Trustees and, following discussions with several leading environmental organisations, representatives from those organisations also joined IPEP.

3.1.3 Credentials

Qualified Environmental Professional (QEP)

The QEP is a multi-media, multi-disciplinary, fully accredited credential that requires environmental professionals to see “the big picture” and to have the skills and knowledge to solve “real world problems”.

Through QEP certification, environmental professionals demonstrate the depth and breadth of their knowledge and experience. They also agree to abide by IPEP’s Code of Ethics.

EPI Credential

The Environmental Professional Intern (EPI) programme is an optional first step towards obtaining QEP status for environmental students and professionals just beginning their careers. The EPI credential is an opportunity for students who anticipate entering the environmental field, or for graduates who have entered the field within the last five years, to demonstrate personal knowledge of general environmental science.

EPI Mentoring Programme

The EPI programme offers the availability of a QEP mentor for up to a seven-year period to provide the EPI with professional guidance and introduction into a network of senior, well-respected environmental professionals.

3.1.4 Certification Basis

Certification is only provided to individuals on the basis of recommendations from senior professionals and examinations conducted periodically by the IPEP.

3.2 Academy of Board Certified Environmental Professionals

The Academy of Board Certified Environmental Professionals (ABCEP)⁷ is a United States-based voluntary professional association “dedicated to serving the environmental professional community.” It is the lead organisation certifying environmental professionals; maintaining exemplary standards of ethics and technical practice; and supporting individuals, our profession and the public relying upon our services. The Academy’s primary mission is to confer the Certified Environmental Professional credential to meritorious environmental professionals found to meet exemplary standards of ethics and technical practice. The process used by this Academy to certify environmental professionals is accredited by the Council of Engineering and Scientific Specialty Boards.

During the past 30 years the Certified Environmental Professional (CEP) designation has been awarded to senior managers and other qualified individuals as a way to demonstrate their professional skills and high standards of conduct. The CEP designation is a national system of excellence and says to employers, clients, colleagues and the public that an individual is a knowledgeable, experienced, and dedicated professional. The CEP is awarded after a comprehensive review of their background, their abilities, and their knowledge. Most CEPs have at least ten years of experience in the field.

3.2.1 Eligibility

The applicants for CEP are required to possess a Bachelor’s Degree and a minimum of nine years of applicable professional environmental experience. Five of the nine years are required to be in a position of responsible charge and/or responsible supervision. Responsible charge is defined as: the direction of environmental work by an environmental professional to the extent that successful completion of the work is dependent on the decisions made by the applicant without advice or approval of others. Responsible

7 <http://www.abcep.org/>

supervision is defined as: the supervision of another professional person's work by an environmental professional to the extent that the applicant assumes the professional responsibility for the work. A Master's Degree may be substituted for one year of the nine years of professional experience and a Doctorate may be substituted for two of the nine years of professional experience. No such substitution is, however, allowed to apply to the requirement for the five years in responsible charge and/or responsible supervision.

3.2.2 Training

The ABCEP also administers the Certified Environmental Professional-in-Training (CEP-IT) Programme which prepares those pursuing advancement in the environmental profession. Those individuals awarded the Certified Environmental Professional credential may use the designation "CEP-IT" after their name.

Each Applicant is evaluated by seven members of the Certification Review Board (CRB). Members of the CRB represent many fields of professional effort, e.g.: consulting, academia, private industry and government. The CRB is responsible for determining the qualifications of each applicant and grants or denies certification based upon the information provided. The Lead Reviewer will interview the applicant to determine the extent of the applicant's knowledge and experience in his or her area of expertise and examine other matters considered germane to certification. These are generally conducted over the telephone.

3.2.3 Functional Areas

Individuals are certified in one of five areas: *Environmental Assessment*: Includes evaluation of risks to, or past impacts upon, the occupants of ecosystems, workplaces, or residences exerted by physical, chemical, or biological agents to which exposure may occur, or may have occurred;

- *Environmental Documentation*: Includes preparation of reports, presentation of facts,

completion of other action to establish administrative records demonstrating compliance with environmental statutes, regulations, and permits;

- *Environmental Operations*: Includes management of facilities in accordance with requirements of environmental statutes, regulations, and permits;
- *Environmental Planning*: Includes arrangements for future facility construction, operation, and/or management in accordance with anticipated requirements of environmental statutes, regulations, and permits or permit renewals;
- *Environmental Research and Education*: Includes conducting and reporting on original investigations into the dynamics of environmental *phenomena*, teaching about such *phenomena* as investigated by oneself and/or other investigators

3.3 Institute of Environmental Management and Assessment

The Institute of Environmental Management and Assessment (IEMA) is a United Kingdom-based global organisation. Reportedly the largest environmental professional body in the world, it provides environmental practitioners "with the knowledge, skills and tools to ensure sound environmental performance delivers real business benefit." IEMA helps its members to make a strategic environmental difference by embedding environment in decision-making at all levels through knowledge exchange, research, conferences, training and publications. With a membership of over 15,000 individual and corporate members based in 83 countries, IEMA is now the leading international membership-based organisation. It is dedicated to the professional development of individuals involved in the environmental profession, whether they be in the public, private or non-governmental sectors.

IEMA's mission is to:

- Promote the goal of sustainable development through the promotion of improved environmental practice and performance;
- Provide recognition, through high-quality professional qualifications, to those individuals who are competent environmental sustainability professionals and to be recognised as a leading organisation in this field;
- Raise the profile of environmental sustainability professionals and the importance of the work that they undertake;
- Contribute to the development of skills and competencies of environmental sustainability professionals through training, information and experience exchange, and the sharing of good practice;
- Be recognised as a centre of excellence and to undertake, disseminate and contribute to research in environmental sustainability and related fields;
- Recognise organisations that successfully contribute to environmental sustainability;
- Employ talented people and help them to develop the ability to make a positive contribution to the Institute's vision in their work; and
- Manage the Institute's resources in an effective and efficient way.

IEMA does not provide accreditation to consulting organisations, however, it runs programmes to certify organisations on their EMS based on their compliance with the ISO 14001 and similar standards.

IEMA offers membership to individuals on various categories:

- **Affiliate Member.** This is the starting membership that does not require any pre-requisite qualification;
- **Associate Member.** This is the basic professional membership which is achieved after completion of Associate Entry Exam or Associate Certificate Course;
- **Full Member.** Associates can become Full Members based on experience and demonstration of knowledge through interview;
- **Fellow.** This is the highest level of professional recognition offered by the IEMA. Attaining this level of membership shows that an individual has demonstrated substantial achievement in the environmental management and assessment field. This level is for highly experienced environmental professionals, who are committed to promoting the goal of sustainable development.

3.4 Canadian Meteorological and Oceanographic Society

Canadian Meteorological and Oceanographic Society (CMOS) provides accreditation to consultants who meet the standards set by the Accreditation Committee of the Society. The accreditation is provided to consultants who contract with clients to provide expertise which the client does not possess. The accreditation is decided by a peer review committee established to ensure that a basic level of qualifications has been achieved and recognised in meteorology or in oceanography. Accreditation is done on a calendar-year basis. An accreditation document is issued and the consultant's name is published in a CMOS Directory of Consultants. Accredited consultants are allowed to write ACM (Accredited Consultant Meteorologist) or ACO (Accredited Consultant Oceanographer) with their names. *Criteria* for accreditation include:

- An appropriate undergraduate degree from a recognised university;

- At least one of the following types of specialised training: post-graduate degree from a recognised university in meteorology or oceanography; post-graduate degree from a recognised university in the natural or applied sciences or mathematics, specialising in one or more branches of meteorology or oceanography; or three years of on-the-job meteorological or oceanographic experience; and
- Upon completion of the above educational and training requirements at least two years of satisfactory performance, at the working level, including some consulting experience.

3.5 National Accreditation Board for Education and Training, India

The National Accreditation Board for Education and Training (NABET), India provides certification to consultants. The main objectives of NABET are to:

- Set and maintain criteria for the registration of personnel in the practice and assessment of Quality and Environment Management Systems;
- Evaluate and register auditors and professionals;
- Set and maintain criteria for and to endorse training courses for personnel engaged in the auditing of Quality and Environment Management Systems;
- Publish the list of Certified Personnel, endorsed training courses and approved training organisations;
- Closely cooperate with Registration Board for Certification Bodies to get feedback and anticipate requirements on training needs; and
- Seek international recognition.

NABET has developed an Accreditation Scheme for environmental consultants. EIAs are essentially

multi-disciplinary activities where inputs are required from specialists having knowledge of the industry/sector for which EIAs are to be carried out as well as in functional areas like land use, air pollution control, air quality modeling, water pollution control, noise and vibration, ecology and bio-diversity, socio economic aspects, risks and hazard management. Recognising this, NABET requires that the key person in developing an EIA Report is the EIA Coordinator (EC) who should have a broad knowledge about the project, as well as the functional areas which are likely to be affected by the activities related to the project in its construction, operation and the closure phases. It envisages the role of the coordinator to include but not be limited to setting-up the team, visiting the site with the team, draw up the terms of reference (TORs), organise various activities to meet the requirements of the TORs, evolving work schedule and seeing that data are appropriately utilised for assessment, mitigation and monitoring. The Scheme also recognises Functional Area Experts (FAEs) who are expected to assess the impacts from the proposed development in their respective areas.

The “*Scheme for the Accreditation of EIA Consultant Organisations*” evolved by NABET identifies the following basic requirements of the EIA Consultant Organisation:

- Qualification and experience of ECs and FAEs;
- Requirements for field investigations and laboratory arrangements to ensure the quality of the baseline data;
- Quality management systems to be followed; and
- Office facilities and other enabling factors to be provided by an organisation.

It is mandatory for organisations that prepare EIA reports for obtaining environmental clearance, to get accredited under the Scheme.

3.5.1 Implementation

For the implementation of the Scheme, NABET is guided by a group of eminent professionals in the field of environmental management and allied subjects structured into four groups as follows:

- Technical Committee – comprising 5-7 very experienced professionals with proven track records. It guides NABET in developing the Scheme as well as the assessment process;
- Accreditation Committee – comprising 5-7 very eminent persons. Apart from approving accreditation, it also issues clarifications on the Scheme from time to time, as necessary;
- NABET Assessors – they are a group of very senior and experienced professionals with relevant experience, who carry out technical assessment of the applications as well as office assessment including interaction with experts (See: later); and
- NABET Secretariat – it comprises a mix of senior professionals and young technical staff which coordinates the entire process of assessment and accreditation.

3.5.2 Eligibility

Only organisations are eligible for accreditation. These can be government, public sector or private organisations that could be proprietary firms, partnership firms or companies, bodies registered under Society Acts, or Companies Act, research institutes and the like, universities, labs or research-based organisations conducting the EIA.

EIA Coordinator

The EIA Coordinator (EC) should possess the following:

- a) Clarity in the concept of the EIA process;
- b) Knowledge of the applicable Acts, Rules and Regulations;
- c) Domain knowledge of the industry/sectors for which the EIAs are to be prepared;

- d) Broad understanding of the environmental aspects related to the industry/sector; and
- e) Leadership quality in planning, selecting and guiding the EIA team.

Minimum Educational Qualification for an EC is:

- a) Bachelor's (graduate) degree or equivalent in technical subjects such as Engineering, Architecture, Environmental Planning, Town Planning and the like from recognised University or Institution, or
- b) Master's (post-graduate) degree in Science and other subjects—Physical, Environmental, Life Sciences, Social Sciences, Economics, Management from a recognised University or Institution.

Qualifications conferred by professional institutions such as Institution of Engineers, the Indian Chemical Society, Indian Institute of Metals, Indian Institute of Chemical Engineers and Indian Institute of Social Welfare and Business Management (IISWBM) are also accepted.

Accreditation Committee has the power to waive off minimum requirements in exceptional circumstances.

Minimum Experience of an EC is:

Minimum seven years overall work experience related to EIA preparation;

Adequate experience for the sector (s) for which s/he is proposed by the Applicant; and

Organisation in terms of (i) having worked in those sectors for at least two years or (ii) having prepared a minimum of three EIA reports for projects in those sectors or (iii) having carried out three environmental assignments (such as environmental monitoring/audits, performance audits, etc.) in those sectors involving at least one month's exposure or (iv) three in combination of (ii) and (iii)

Functional Area Experts

FAEs are expected to provide inputs in their respective areas of specialisation. They should have:

- a) an in-depth knowledge in their respective areas of specialisation;
- b) a broad understanding of the EIA process;
- c) the capability of assessing the impacts of the project on the physical, biotic and social environment, as applicable; and
- d) the knowledge to suggest or vet mitigation measures.

In view of the above expected role, the educational background has been given emphasis for the FAEs.

Different EIAs will require inputs from diverse functional areas depending on the type and magnitude of the project and its depth and the extent of the anticipated environmental impacts. Twelve areas of expertise have been identified that are required for carrying out EIAs. These include: land-use; air pollution monitoring, prevention and control; meteorology; air quality modeling and prediction; water pollution monitoring, prevention and control; ecology and biodiversity; noise and vibration; socio-economic aspects; hydrology, groundwater and water

conservation; geology, soil conservation; risk and hazards management; and solid and hazardous waste management.

A Bachelor's (graduate) degree or equivalent in technical subjects is prescribed as the minimum qualification. An expert is required to have a minimum of three years overall experience in the functional area(s) concerned out of which at least one year should be in the application of the functional area knowledge in developing EIA report(s) to work as an independent FAE for Category B projects.

Any organisation to be accredited must also have at least two in-house FAEs who, together with the above EC, should have the required qualification and experience covering the core functional areas.

An expert meeting the requirements of the Scheme may apply for both, EC and FAE. To do justice to the role of an EC and a FAE as envisaged in the Scheme, however, an expert may opt for a maximum of five sectors as an EC and four functional areas as a FAE.

A 'free-lance' expert may be shown as an empanelled expert for a maximum five applicant organisations altogether both as an EC and FAE (at the same time s/he should meet the other requirements stated earlier).

4. OPTIONS FOR ACCREDITATION SYSTEMS

In this section, the options for accreditation schemes and their pros and cons are discussed. This is done in the form of a table shown in **Exhibit 4.1**.

4.1 Possible Accreditation Organisations

Some of the organisations that may be involved in developing the accreditation of consultants are discussed below.

4.1.1 Pakistan Standards and Quality Control Authority

The Pakistan Standards and Quality Control Authority (PSQCA), under the Ministry of Science and Technology, is the national standardisation body. In performing its duties and functions, PSQCA is governed by the PSQCA Act, 1996. PSQCA became operational on December 1st, 2000, working with 81 scientists/engineers and 254 supporting staff as a self-financed organisation, been given the task of not only formulation of Pakistan Standards but is also responsible for promulgation thereof. PSQCA is a member of the International Organisation for Standardisation (ISO), the International Electro-technical Commission (IEC), and the International Organisation of Legal Metrology (OIML). PSQCA has also been established to advise the Government on standardisation policies, programmes and activities to promote industrial efficiency and development, as well as for consumer protection.

The main function of the Department is to foster and promote standards and conformity assessment as a means of advancing the national economy, promoting industrial efficiency and development, ensuring the health and safety of the public, protecting the consumers, facilitating domestic and international trade and furthering international co-operation in relation to standards and conformity assessment.

Its objectives are:

- Setting up of standards on quality and dimensions, preparation and promotion of general adoption of Pakistan Standards Specifications, operation of Certification Marks Scheme and coordination of the efforts of manufacturers and consumers for the improvement of standardisation and the provision of assistance in the manufacture of quality products;

- Testing and assessment of industrial raw materials and finished products to establish their quality, grade and composition conforming to national and international standard specifications in various fields like chemical products and formulations, textiles, food items, building materials, mechanical engineering, electrical and electronic goods and appliances, etc. and provision of consultancy services to various industrial units so as to achieve improvement of quality of their products;
- Working on standardisation and improvement of analytical methods, procedures and consultancy in the field of metallurgy. Inspection and testing of products and services for their quality specifications and characteristics during use and for import and export purposes;
- Grant, renewal, suspension, cancellation or withdrawal of a license or certification in relation to the use of any of the Authority Marks;
- Enforcement and implementation of quality and environmental management systems that is ISO 9001:2000 and ISO 14000 as well as assistance to local industries to obtain certifications for these systems;
- Coordination and Cooperation with other national, regional and international organisations, associations, societies, institutions or councils, whether incorporate or not, whose objectives are wholly or in part similar to those of the Authority.

4.1.2 Pakistan National Accreditation Council

Pakistan National Accreditation Council (PNAC) is a national organisation that provides accreditation to laboratories under ISO 17021. Its scope is, however, not limited to ISO 17021 and, hence, it

can provide accreditation for consulting firms provided a standard is available.

4.1.3 Pakistan Environmental Protection

Agency

Although the scope of the Federal Environmental Protection Agency is now limited to Islamabad Capital Territory after the 18th Amendment to the Constitution, it is likely to retain some coordination and policy roles. It may be entrusted with Accreditation functions.

4.1.4 Pakistan Environmental Assessment

Association

One attempt to address this issue was in the form of the Pakistan Environmental Assessment Association (PEAA). PEAA was conceived as a national network of impact assessment professionals, established in the late nineties to address some of the problems pertaining to EIA system deficiencies. Its members included government agencies, environmental consultants, and non-governmental organisations. It was thought to be a forum through which impact assessment in Pakistan could be promoted and the capacity developed for writing and review of EIA. It was also considered to be a neutral technical body to provide advice to the EPAs on EIAs, Strategic Environmental Assessment, and other technical matters. Accreditation of the EIA consultants was also considered to be a function of the PEAA. For various reasons, however, the PEAA did not perform as originally envisaged.

4.1.5 Certification Bodies

These include organisations such as SGS Group and Afnor Group (formerly AFAQ-EAQA).

4.2 Accreditation Types

There are basically two types of accreditation - individual and organisation. A third possibility is certifying both or the organisation on the basis of individual certification.

Exhibit 4.1: Options for Accreditation Schemes

Area	Option	Discussion
Accreditation Organisation	Regulatory agency such as Federal EPA (www.environment.gov.pk)	<p>EPAs have limited technical capacities to manage this task. Further, there is the constitutional issue of whether the Federal EPA accreditation can be applied to the provinces.</p> <p>The alternate is to give these powers to all the EPAs. The regional EPAs also have capacity issues. Further, similar with the Federal EPA the certification from one province may not apply to the other provinces. Thus consulting firms would be required to obtain multiple certifications which is not practical.</p>
	Industry Association like PEAA	<p>This is a possibility but this body does not exist. To constitute this body for this purpose, and make it effective to the extent that it becomes self-supporting in terms of finances and management</p>
	Pakistan Standards and Quality Control Authority (PSQCA) (www.psqca.com.pk) and Pakistan National Accreditation Council (PNAC)	<p>systems will take considerable effort and time. Further, as the body will have members from the very organisations that require accreditation a potential for conflicts of interest exists.</p> <p>PSQCA is an autonomous and functional body. It has been involved in developing standards for various types of industry and there is the possibility to involve this organisation as the Accreditation Body.</p>
	Private sector certification companies	<p>The objectives of PSQCA includes “Enforcement and implementation of quality and environmental management systems, that is ISO 9001:2000 and ISO 14000 and assistance to local industries to obtain certifications for these systems”. The first step in accreditation would be to develop a standard for member organisations. This standard on the lines of ISO 9001:2000 but would be specifically geared towards environmental consulting firms. The accreditation to the consulting firms will be provided by the PNAC.</p>
Accreditation Type	Individual	<p>Private sector certification companies undertake audits of private and government sector firms against management standards such as ISO 9000 and ISO 14001. These companies may be involved in this role; however, this will first require the development of standards against which the audit can be undertaken.</p> <p>Based on the discussion with PSQCA, the role of these organisations can be further evaluated.</p> <p>Individual accreditation of consultants and experts is widely practiced and because of precedence and experience is easy to implement. The eligibility criteria are easy to set based on educational qualification and experience.</p> <p>The main difficulty is in differentiating the consultants on the basis of quality of work. It is possible for two consultants with similar experience and qualification, on paper, to have a widely different</p>

Area	Option	Discussion
		<p>A second problem relates to the qualifications of senior EIA consultants in Pakistan today. Most of these professionals do not have formal qualifications in environmental management. Professionals belonging to this group may have to be treated differently on individual basis.</p> <p>For junior consultants, a system of certification based on tests may be required. Such an examination can be instituted by organisations such as Aga Khan University-Examination Board, AKU-EB (examinationboard.aku.edu/Pages/home.aspx)</p> <p>Discussion is required with AKU-EB to further assess the feasibility of this.</p>
	Organisational	<p>Organisational accreditation is most desirable from an EIA quality point of view but is difficult to implement for various reasons such as:</p> <ul style="list-style-type: none"> ● A large number of experts are involved from various disciplines. The scheme shall ensure that all of them are available to the EIA firm; ● Free-lance consultants and experts often move between organisations making it difficult to categorise the consulting firm based on their staff; ● Several of the consulting firms are multi-disciplinary, providing services in environment and several other areas. The accreditation scheme should take this into account when setting the criteria for eligibility. Alternatively the firms may be required to clearly separate their environmental and EIA business from the rest; and ● There is no existing mechanism to monitor the staff and resources of consulting firms. Without such a mechanism, which may take time to develop and implement, the accreditation scheme may not be effective.
	Combination of individuals and organisations	<p>A combination of individual certification and organisational accreditation may be the best option. This may require more than one accreditation-body, one for organisations and one for individuals.</p> <p>The main advantage of this option is that it can be implemented in phases, starting with individual certification followed by organisational accreditation.</p>
Voluntary vs Mandatory	Voluntary	<p>This may be preferred because it gives flexibility to organisations and fits well with market forces. Organisations that do not wish to have the accreditation can still compete in the market on the basis of their otherwise strength and market reputation.</p>
	Mandatory	<p>A mandatory requirement brings uniformity and enforces a certain minimum standard.</p>

5. PROPOSED ACCREDITATION SYSTEMS

The recommendation for the accreditation scheme based on the analysis and the feedback from the stakeholders is presented below. Where difference in opinion existed among the stakeholders all opinions are included as options.

5.1 General Concept

Based on the analysis provided earlier, it is the opinion of the author of this report, that the accreditation scheme shall have the following elements:

1. Both certification of individual consultants and accreditation of consulting firm shall be considered.
2. The certification of individual consultants shall be based on a uniform *criteria*; the *criteria* shall include:
 - Educational qualification;
 - Experience of EIA including the roles in which they were involved and the quality of the EIA. This may require categorisation of recent EIAs for their quality for which separate criteria and procedure may have to be developed;
 - An examination to be conducted by a recognised organisation such as the Aga Khan University Examination Board; and
 - Interview with senior professionals. This may be only required for mid-career consultants and experts.

A preliminary scheme for certification is included and discussed in **Section 5.2**.

3. Work on development of an accreditation scheme for consulting firms shall be conducted separately. This would entail the following:
 - Development of management standards for consulting firms. An ISO 9000 type management standard may be developed. Elements of individual consultants' certification are to be incorporated in this scheme;

- Agreement with Pakistan Standards and Quality Control Authority (PSQCA) to notify and implement the standards;
- Development of management systems in the consulting firms;
- Training for auditing firms to conduct audits for these standards; and
- Accreditation by Pakistan National Accreditation Council (PNAC) on successful completion of the audit.

Preliminary *criteria* for accreditation of consulting firms are discussed in **Section 5.3**.

4. The decision on mandatory or voluntary standard shall be taken after the details of the proposed scheme are worked out. The decision shall involve feedback from the consulting firms.

5.2 Preliminary Scheme for Certification of EIA Experts

5.2.1 Objectives of Certification

The objective of individual certification is to set a minimum qualification for the individuals who are to undertake the Environmental Assessment (EA). This is to be done in order to bring uniformity and consistency in EA reports and hence improve their qualities.

5.2.2 EA Professionals

Broadly, three types of professionals are involved in the development of an Environmental Assessment (EA). These can be categorised as follows:

1. Environmental assessment experts are people who are at the centre of the EA process. Generally, they are expected to have an understanding of the EA process; know regulatory requirements and international best practices; are aware of the developments in environmental science and technology; and

have an understanding of the environmental issues faced by the country. These are also the people who are qualified to manage the EA process by ensuring that all legal requirements at various stages are met; interacting at the professional level with the subject specialist, and integrating the inputs from various experts into the EA report; and ensuring the quality of the product. Typically, the EA experts have educational qualification in environment or related natural or social sciences and experience of working in the area.

2. Subject Specialists are people from various disciplines related to environment such as ecology, chemistry, sociology, hydrology, and soil science, who contribute to specific issues in the EA process. Their core qualifications are in their respective fields but they also need an understanding of the environmental issues and the EA process. The core competence and professional engagement of the subject specialists are in their respective subjects. They typically include university professors and researchers in various research organisations such as the National Agricultural Research Council and the Pakistan Museum of Natural History.
3. Other professionals not associated with conducting the EA but contribute to it in their professional capacity as regulators or reviewers.

5.2.3 Categories

The following categories of certifications are proposed:

1. *Associate EA Professional (AEAP)*: Fresh environmental graduates and other professionals associated with the EA process will receive this certification; hence, the eligibility criteria for this category will be minimal.
2. *Qualified EA Professional (QEAP)*: Individual environmental consultants conducting EIA

and IEE and meeting the eligibility criteria will receive this certification. This will be the main certification for EA professionals.

3. *Lead EA Professional (LEAP)*: This is a higher level qualification for QEAP. Selected QEAP who meet the eligibility criteria qualify to become LEAP.
4. *Qualified EA Subject Specialists (QESS)*: Individual subject specialists working in specific areas of EA and meeting the eligibility criteria will receive this certification. This will be the main certification for subject specialists. The subject specialist may also opt to work as a full-time member of the EA team and opt to become a full-time EA Expert.

5. *Fellow EA Professional (FEAP)*: AEAP associated with the EA in functions other than conducting EA and meeting the eligibility criteria will qualify for this certification.

The conceptual progression of the proposed categories is shown in **Exhibit 5.1**.

5.2.4 Eligibility Criteria

The proposed eligibility criteria for the proposed categories are presented in **Exhibit 5.2**.

The proposed scheme is essentially for future certification. It may be required that senior professionals who are currently part of the practicing community be given QEAP and FEAP certification. This will be done on the basis of interviews and known professional status without having to go through the examination process.

Exhibit 5.1: Conceptual Scheme for Certification of EA Professionals

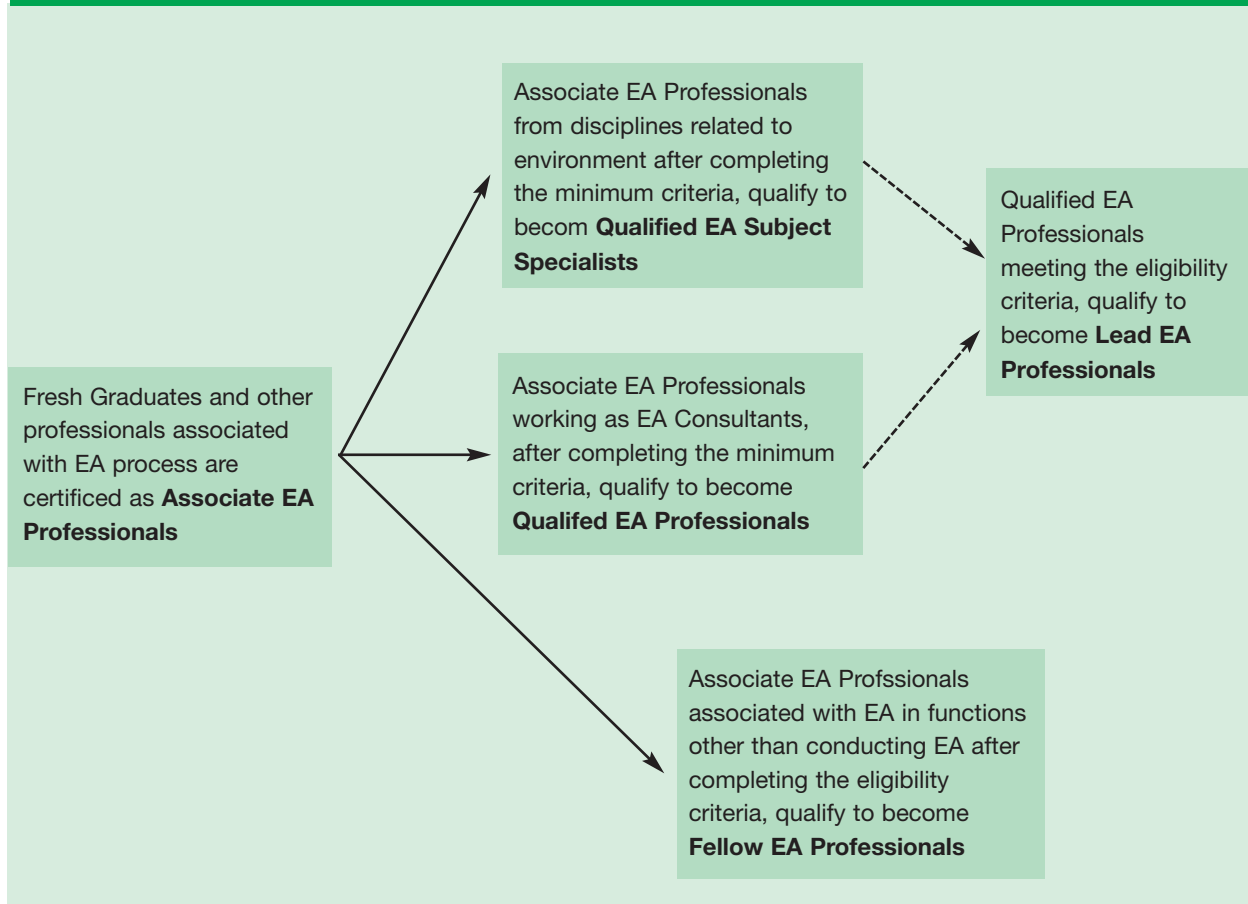


Exhibit 5.2: Proposed Eligibility Criteria for Environmental Professional

Category	6. Criteria	Typical Eligibility
Associate Environment Assessment Professional (AEAP)	Education Experience	<ul style="list-style-type: none"> Professional degree in environment or related fields Association with the EA process in any capacity
Qualified Environment Assessment Professional (QEAP)	Education Experience Demonstrated Knowledge	<ul style="list-style-type: none"> Master's Degree (or equivalent)¹ in environment or related fields Three years of Experience in EA profession Involvement in some² large EIA reports, practice and knowledge of working in national and international major projects, including those produced under <i>international best practice guidelines</i>³ Knowledge of EA process, regulatory requirements, international best practices, development sector environmental aspects, and current environmental issues demonstrated through an examination.
Lead Environment Assessment Professional (LEAP)	Education Experience Demonstrated Knowledge	<ul style="list-style-type: none"> Master's Degree (or equivalent)¹ in environment or related fields seven years of Experience in EA profession Involvement in compilation of several² large EIA reports, practice and knowledge of working in national and international major projects, including those produced under <i>international best practice guidelines</i>³ and some as team leader Knowledge of the EA process, regulatory requirements, international best practices, development sector environmental aspects, and current environmental issues demonstrated through an examination.
Qualified Environment Assessment Subject Specialist (QESS)	Education Experience Knowledge	<ul style="list-style-type: none"> Master's Degree in relevant field Involvement in compiling some² EA reports
Fellow Environment Assessment Professional (FEAP)	Experience	<ul style="list-style-type: none"> Professional (and approved) training in the EIA process within the last five years

Notes: 1. "Master's degree (or equivalent)" refers to 16 years of schooling, i.e., four years of tertiary level education after high school. 2. "Several" may be defined as, for example, 5 to 7 and "some" may be defined as 3 to 5. These numbers are subjective and may be decided when the scheme is developed. 3. "International best practice guidelines" generally means guidelines such as that of the World Bank Group and Asian Development Bank.

6. PRELIMINARY SCHEME FOR ACCREDITATION OF CONSULTING FIRMS

6.1.1 Purpose of Accreditation

The purpose of the Accreditation Scheme is to define the minimum requirements that an organisation shall meet to undertake environmental assessment of development projects in Pakistan.

6.1.2 The Concept

For an organisation to follow the EA best practice and produce a good EIA or IEE, certain qualities are needed that stem from the desired qualities of the EIA as discussed in the main report. In particular, the organisation must have:

- A number of experts who are well-versed in the Science of EIA and have sufficient experience to identify potential issues;
- Access to experts from various fields who can undertake specific studies related to their specialties;
- The means to undertake baseline surveys;
- The ability to manage a multi-disciplinary team; and
- The tools to ensure quality of the process and products.

The scheme proposed here defines the minimum requirements that a firm shall have to function as a consulting firm for EIAs. As it is possible that all firms may not have all the abilities, the firms may be categorised into two or three categories. The firms meeting all the criteria, classed as *Category A*, will be allowed to take all kinds of EIAs including those of major projects. *Category B*, and possibly *Category C*, firms will only be allowed to undertake relatively small and simple environmental assessments.

6.1.3 Key Requirements for the Organisation

In order to obtain accreditation, a consulting firm must meet the following criteria to qualify as *Category A* consulting firm:

1. Qualified Environmental Professionals
 - The firm must have at least five (5) QEAP including one LEAP. These terms have been explained earlier.
 - The QEAP and LEAP must be full-time employees of the firm for at least six months in the year prior to accreditation.
2. Subject Specialists
 - The firm must have access to QESS as per the following list:
 - Environmental Engineer;
 - Air Quality Modeling Expert;
 - Water Pollution Modeling Experts;
 - Ecologist (mammalogist, botanist, herpetologist, ichthyologist, ornithologist);
 - Noise Modeling Expert;
 - Socio-economist;
 - Hydrologist and/or Hydro-geologist;
 - Soil Scientist;
 - Environmental Legal Expert;
 - GIS Expert;
 - Marine Scientist;
 - Environmental Geologist; and
 - Chemical Engineer or Chemist
 - A *Category A* firm must have at least two of the above QESS as full-time employees and have memorandum of association with at least three other experts.
3. Equipment

To undertake surveys, a *Category A* firm must have access to field equipment such as GPS receivers, compasses, digital camera, and field kits for water analysis.



Stakeholder consultation on Accreditation Mechanism in Islamabad, September 2013.

4. Laboratory

A *Category A* consulting firm must have its own laboratory or, alternately, have a memorandum(s) of association with firms (s) to carry out the following types of surveys:

- Ambient air quality;
- Stack emission;
- Soil;
- Waste-water;
- Noise; and
- Ground-water sampling.

5. A *Category A* consulting firm must have a management system to ensure quality of its products. The management system may be based on ISO 9000 and must include the following:

- Quality policy;
- Management responsibility;
- EIA manual;
- Document and data control system/archive;
- Information management system;
- EIA process control;
- EIA peer review mechanism;
- EIA editing and quality check manual;
- Sampling and analysis quality assurance system;
- Testing equipment inspection and calibration system;
- Control of non-conforming reports;
- Corrective and preventive action plan;

- Training programme; and
- Continual improvement plan.

6.1 Further Work

Based on the recommendation provided earlier, further work for NIAP is envisaged to include the following:

1. Discussion with the following organisations to assess the possibility of implementation of the proposed scheme:
 - Pakistan Standards and Quality Control Authority (PSQCA);
 - Aga Khan University Examination Board; and
 - Auditing firms such as SGS.
2. Development of a final document on accreditation options and conditions needed for the proposed system to function. This will include, but not be limited to, the topics below:
 - Duration and grades for accreditation;
 - The role of training in accreditation, and how such training would relate to other EIA training that is offered;
 - Mechanism to ensure transparency and accountability of the System;
 - Quality control system; and
 - Administrative system and fee structures.
3. Development of a framework for the management system for a consulting firm.
4. Development of a multi-year action plan for introduction and establishment of the accreditation system proposed, including any testing strategy for accreditation elements that need to be trialed and perfected before they can be instituted.

6.2 Recommended Organisations

The preferred certification and accreditation body is PEAA. As this organisation is currently not functional, it is recommended that the body may be activated on a priority basis. In the interim period, the responsibility may be handled by a committee comprising representatives from the environmental protection agency and the private sector. The recommended examination body is the Aga Khan University Examination Board.



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